

FIG. 1

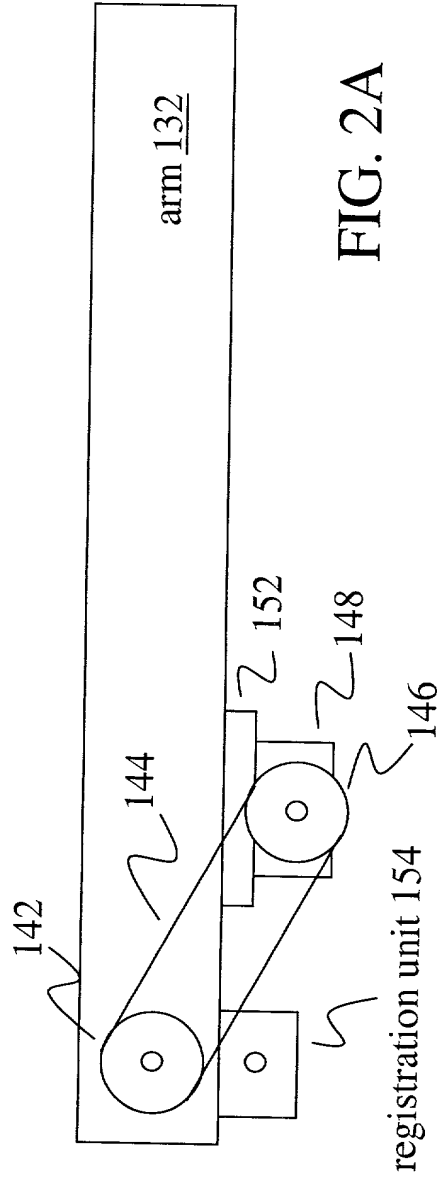


FIG. 2A

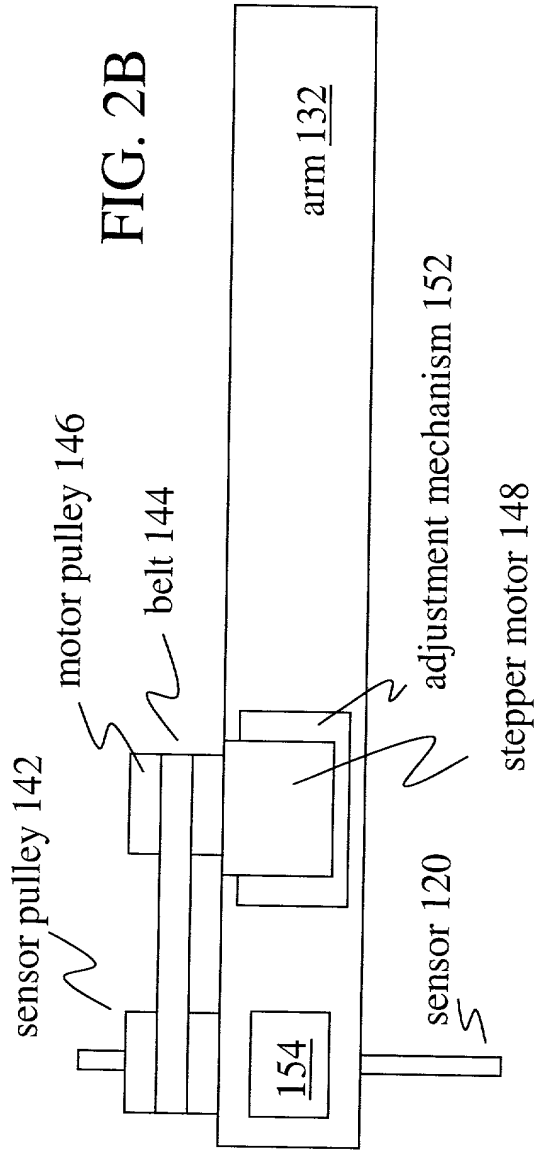


FIG. 2B

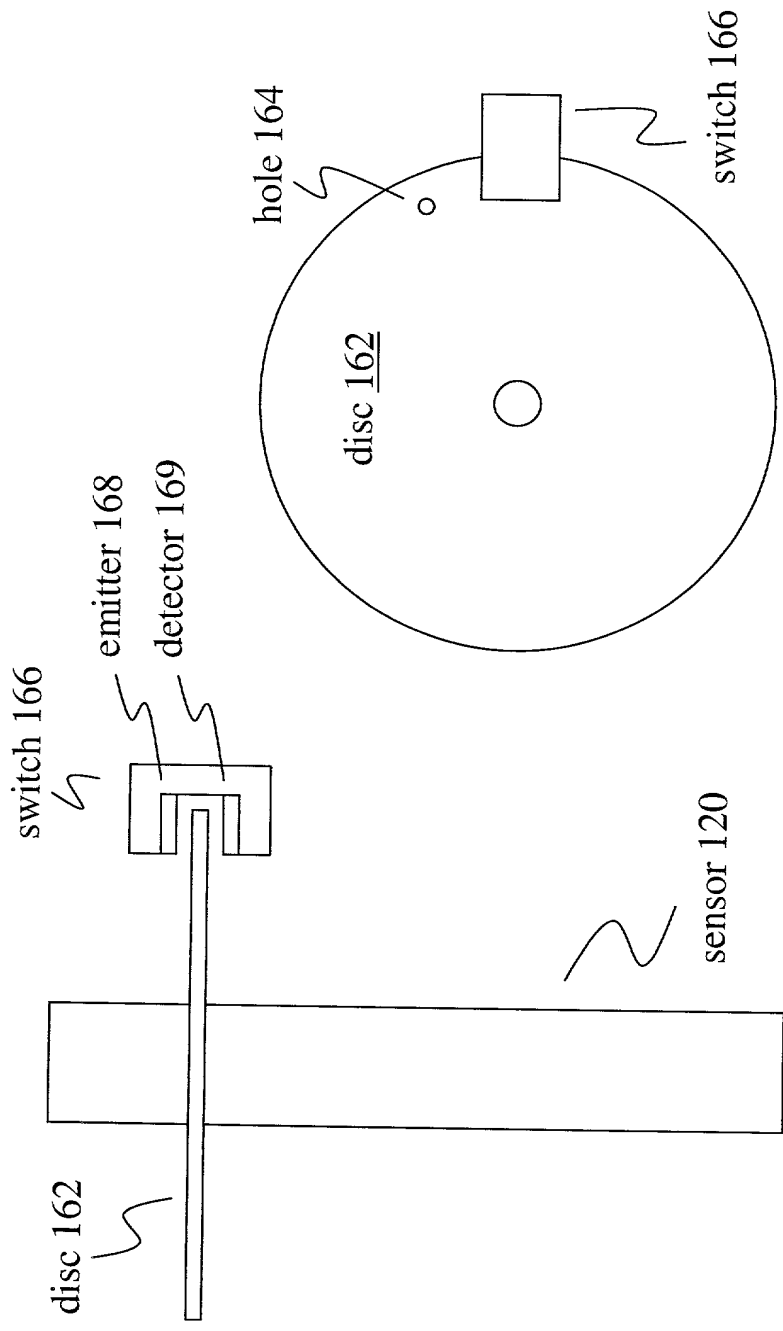


FIG. 3A

FIG. 3B

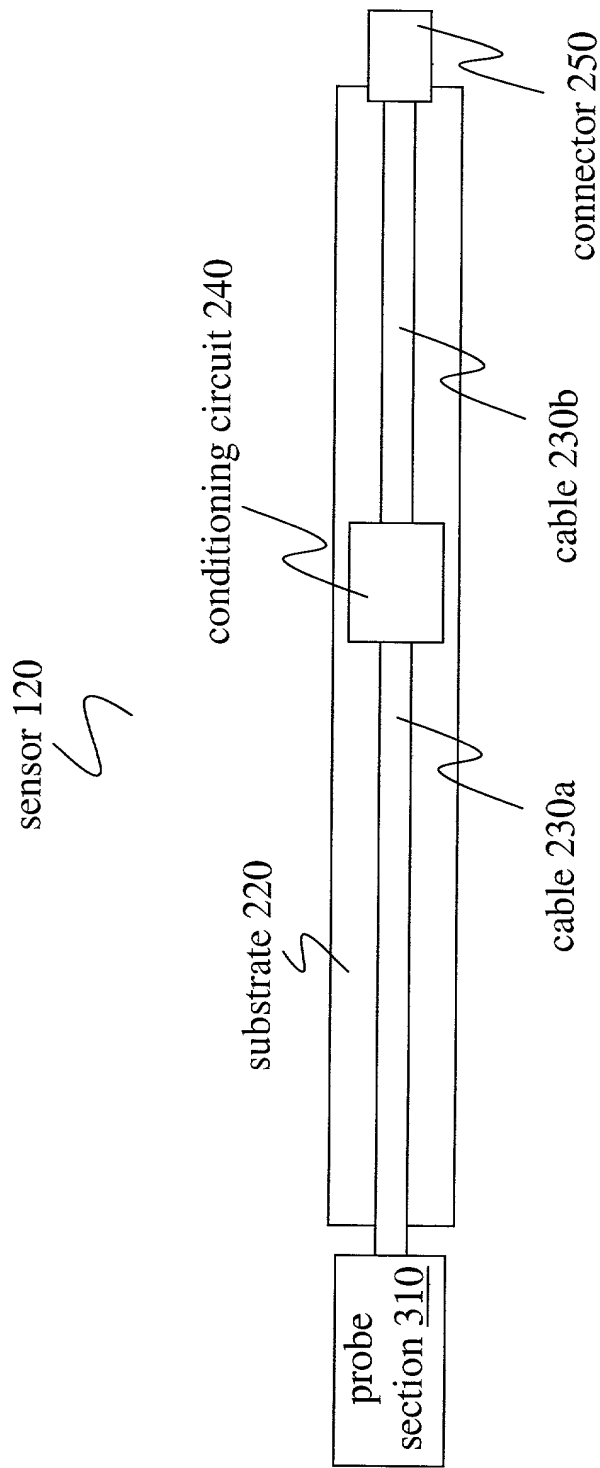


FIG. 4

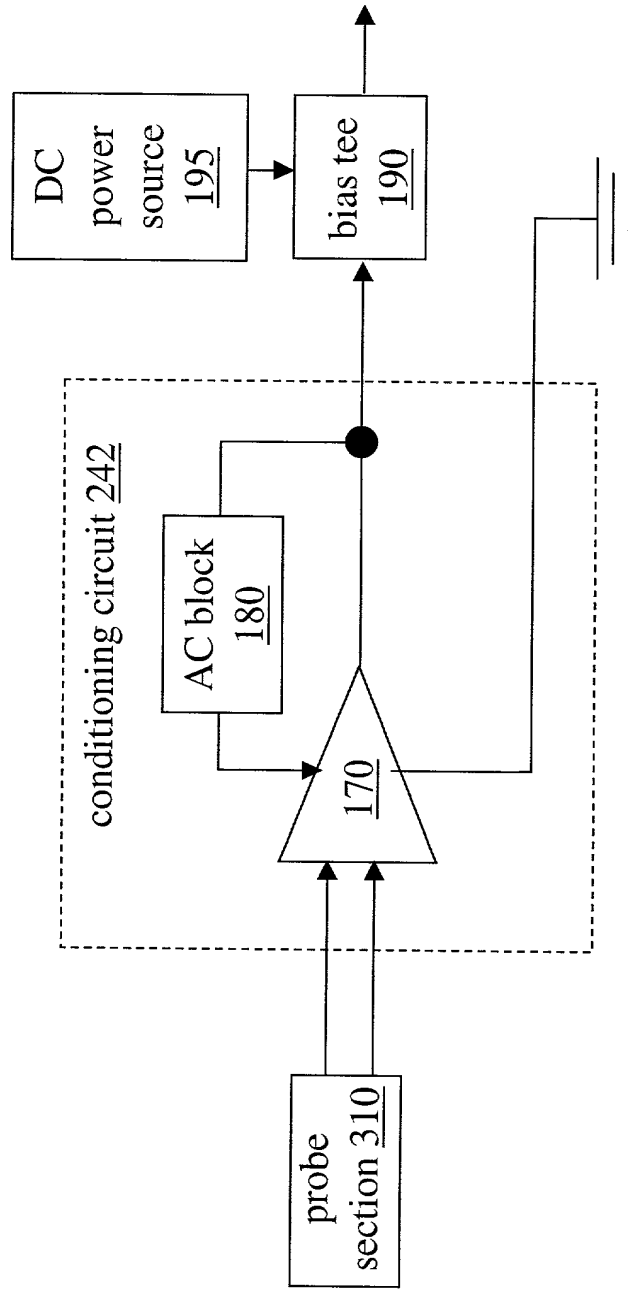


FIG. 5

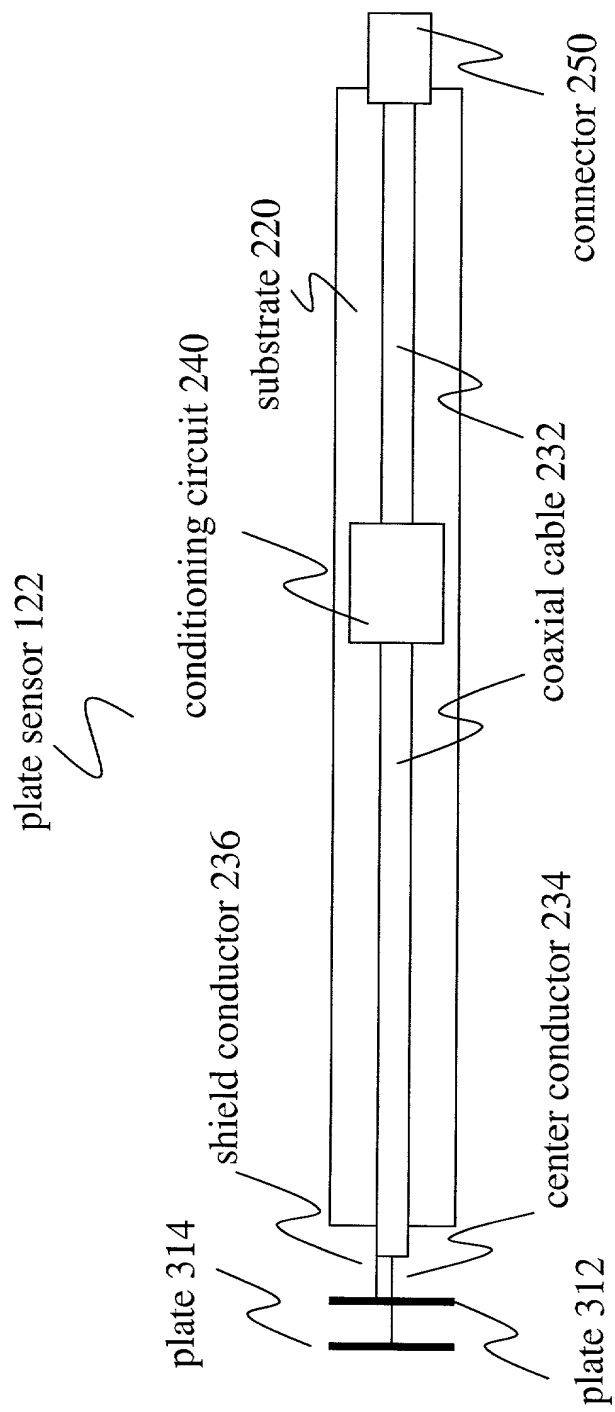


FIG. 6

FIG. 7A

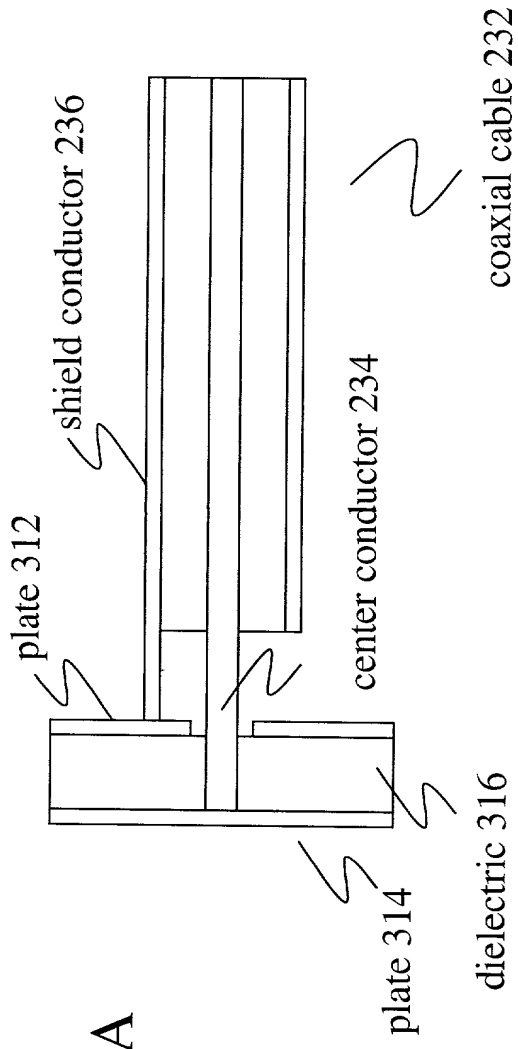
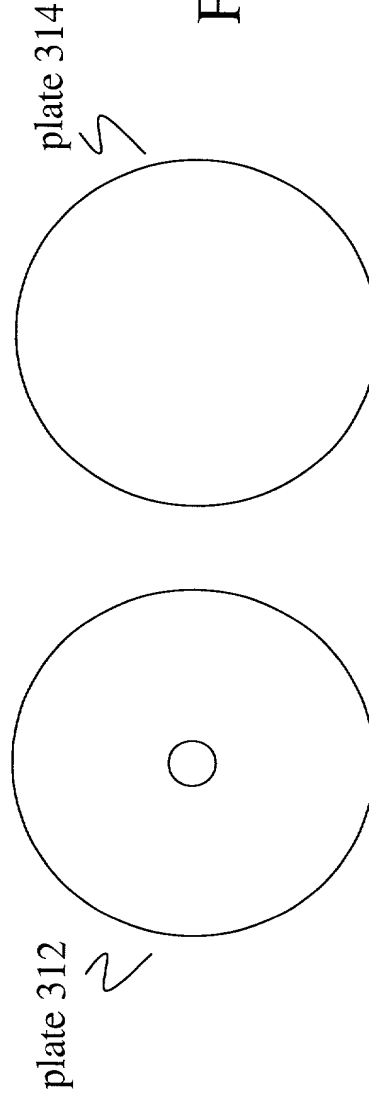


FIG. 7B



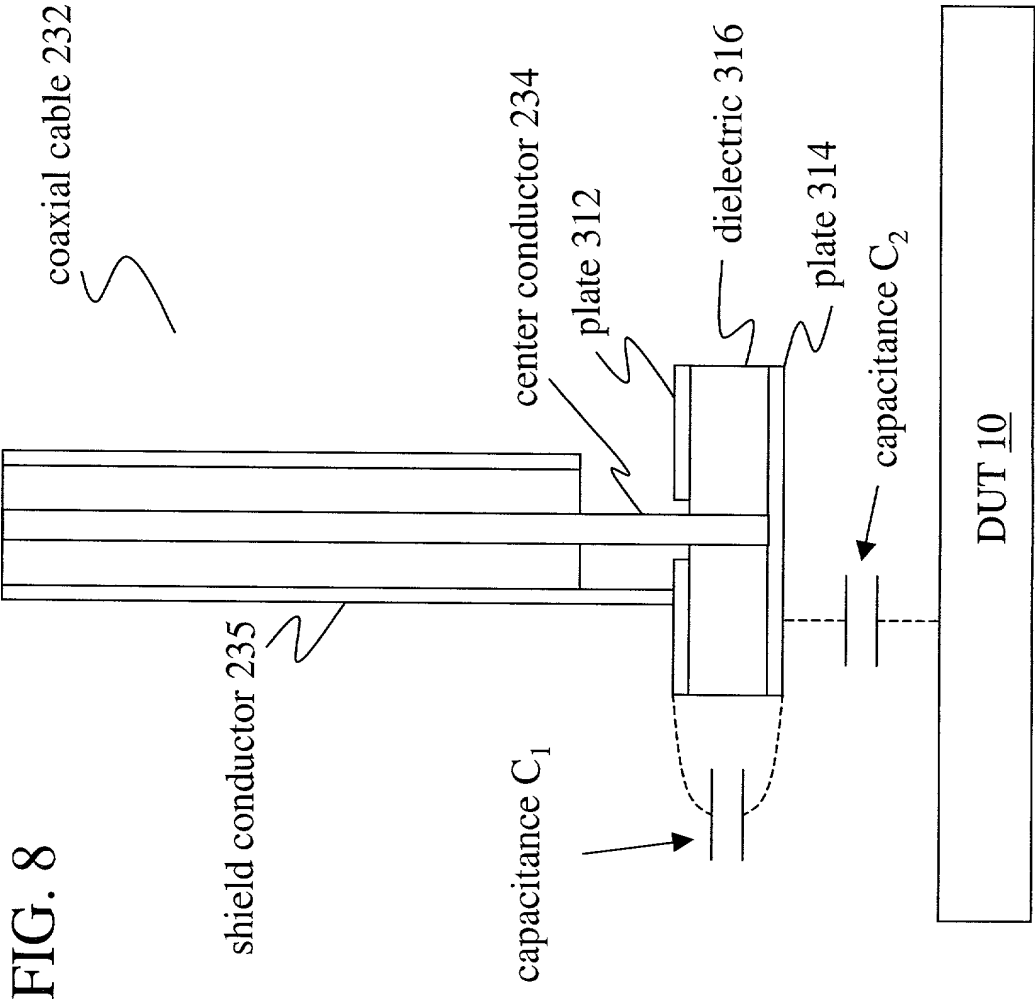
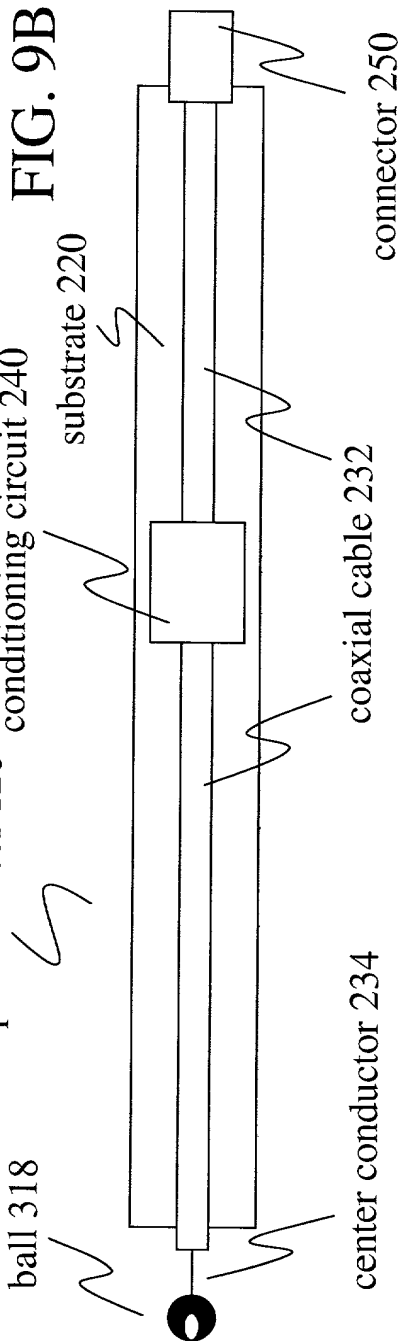
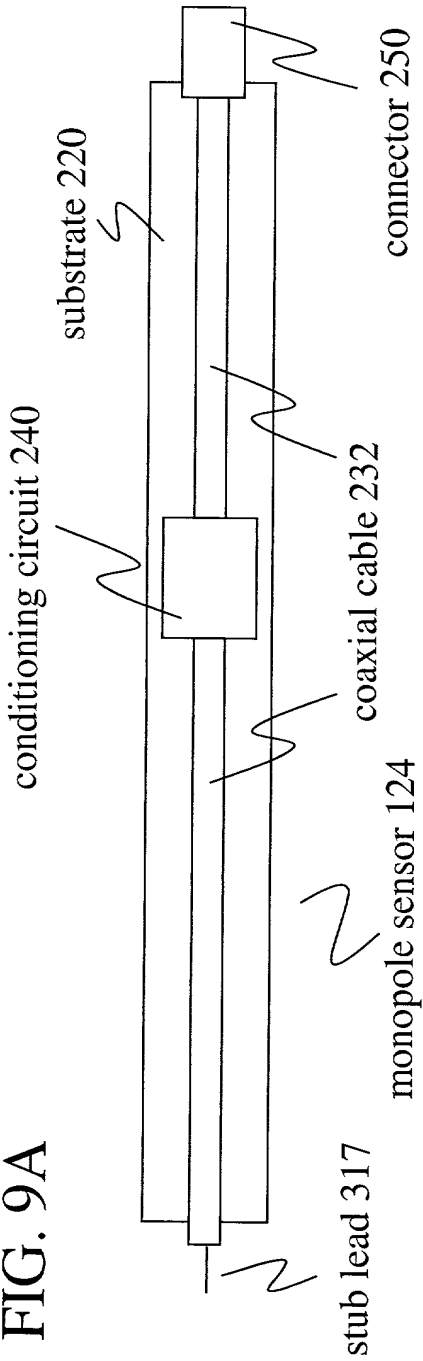


FIG. 9A



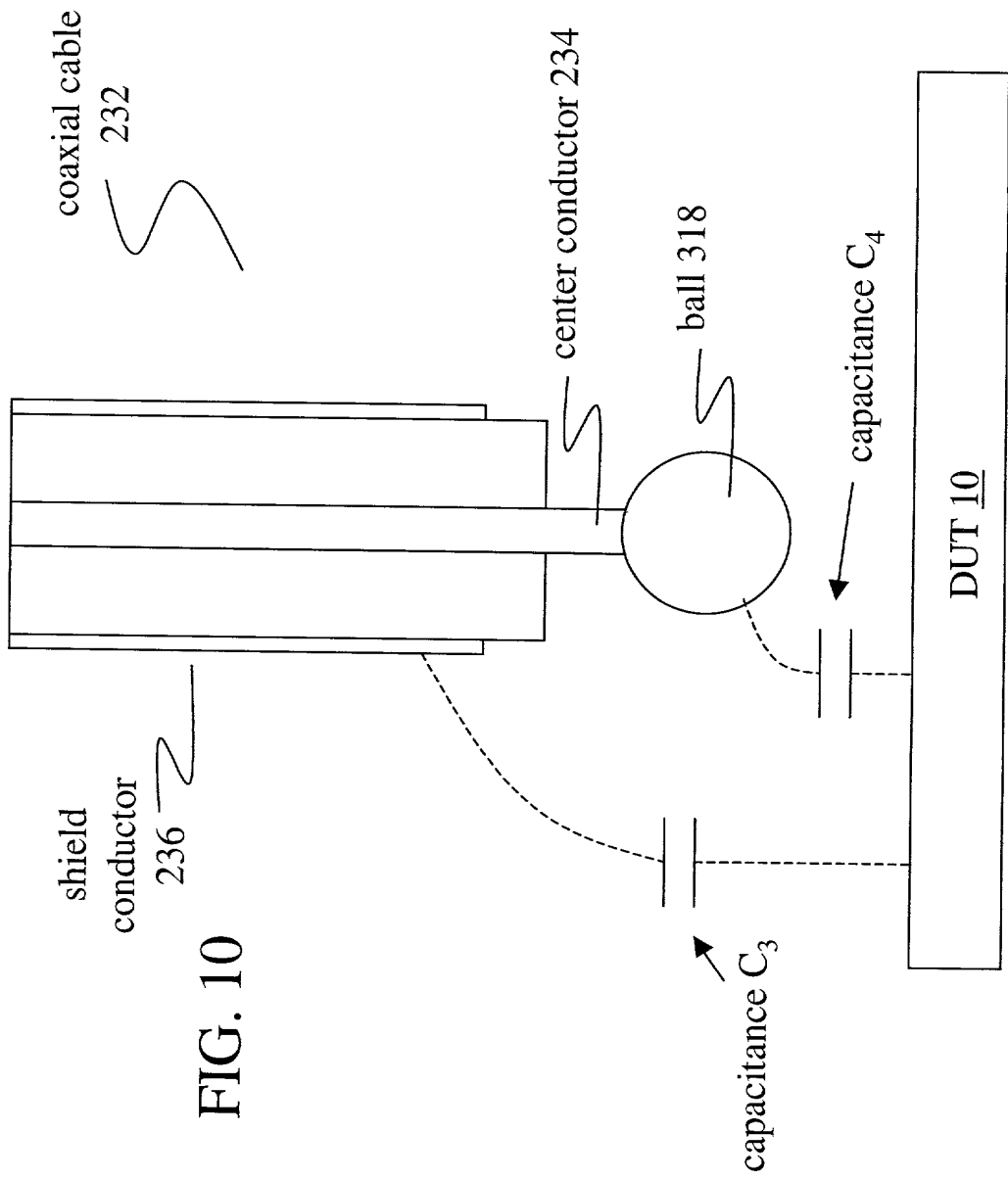


FIG. 10

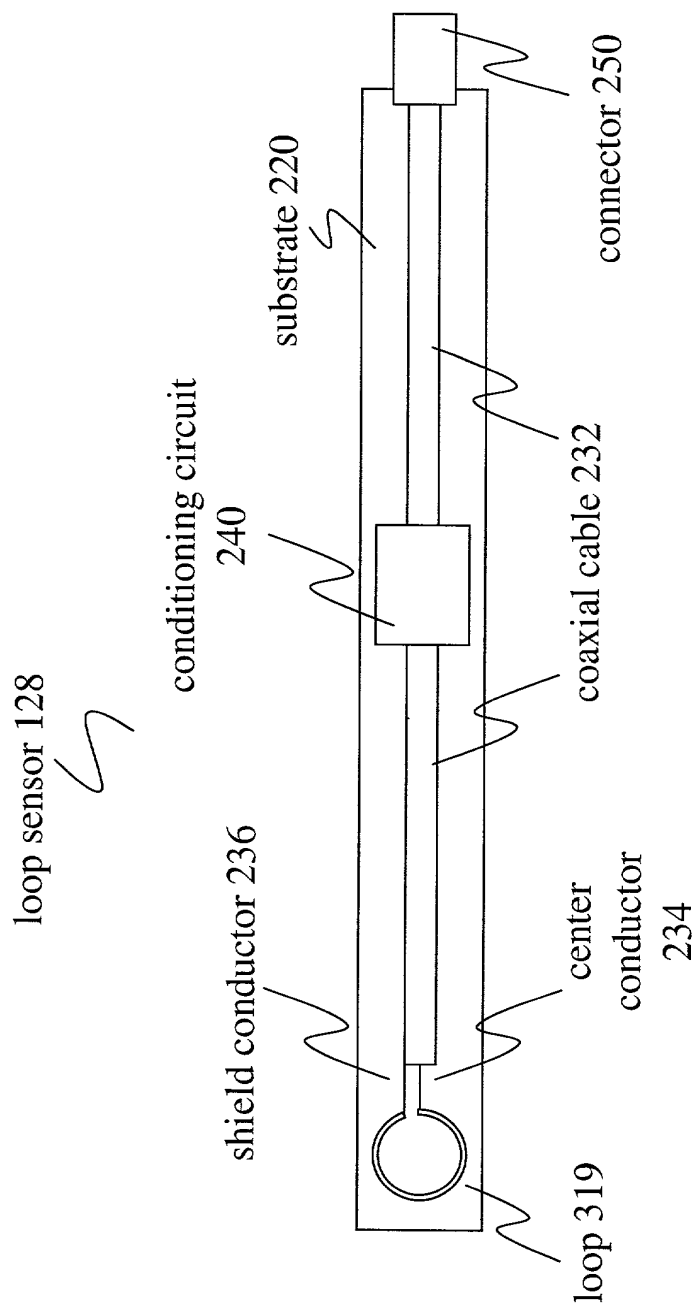


FIG. 11

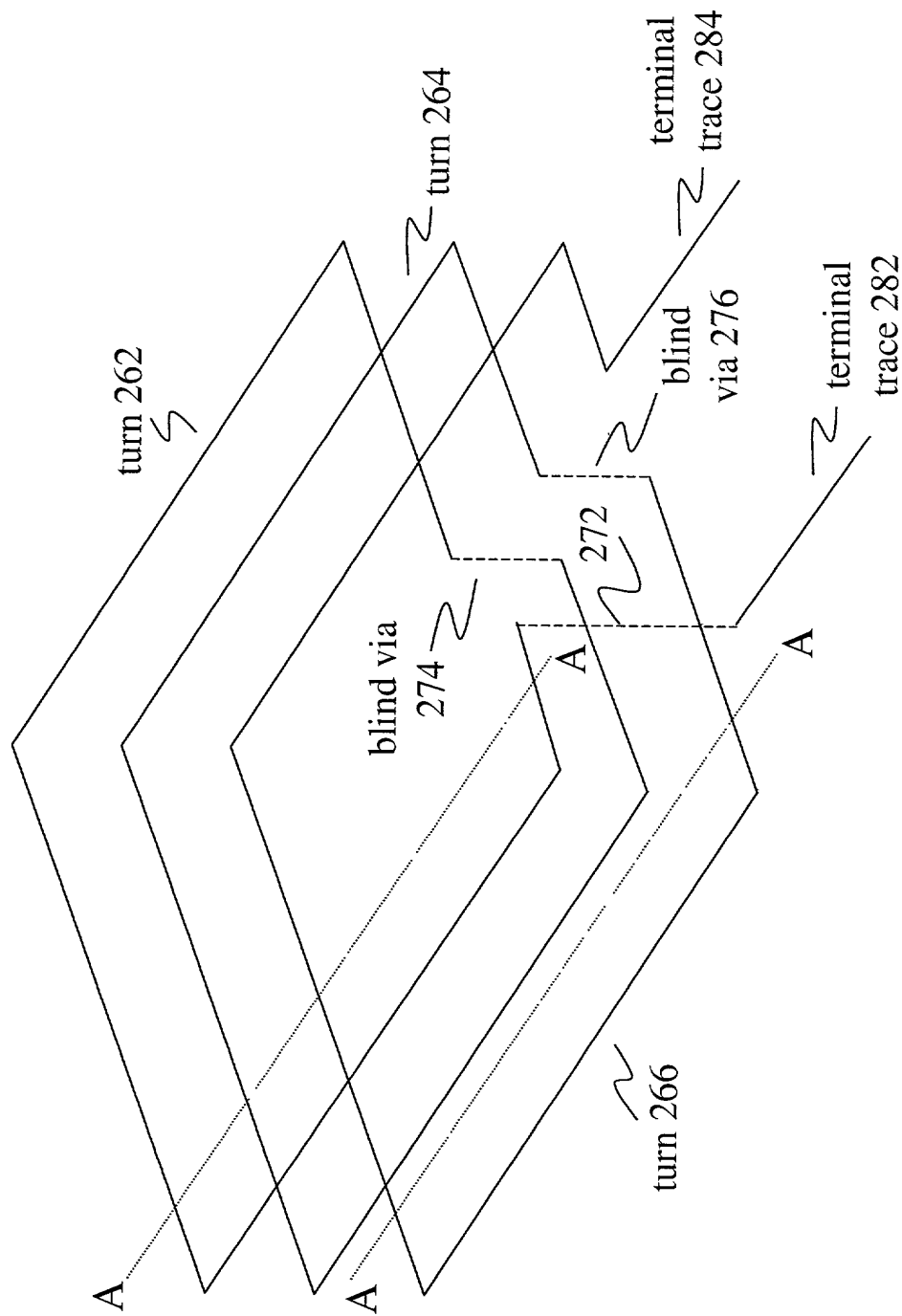


FIG. 12

interlayer insulator 290

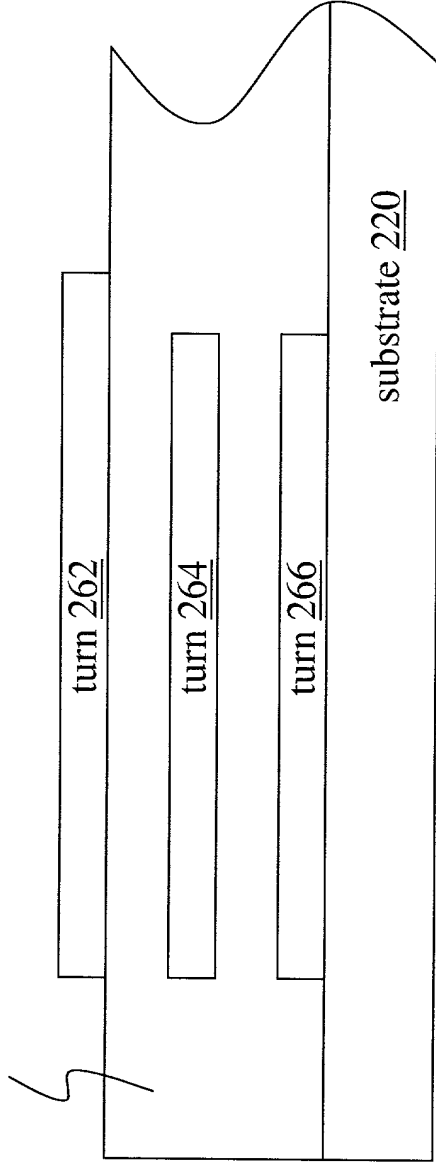


FIG. 13

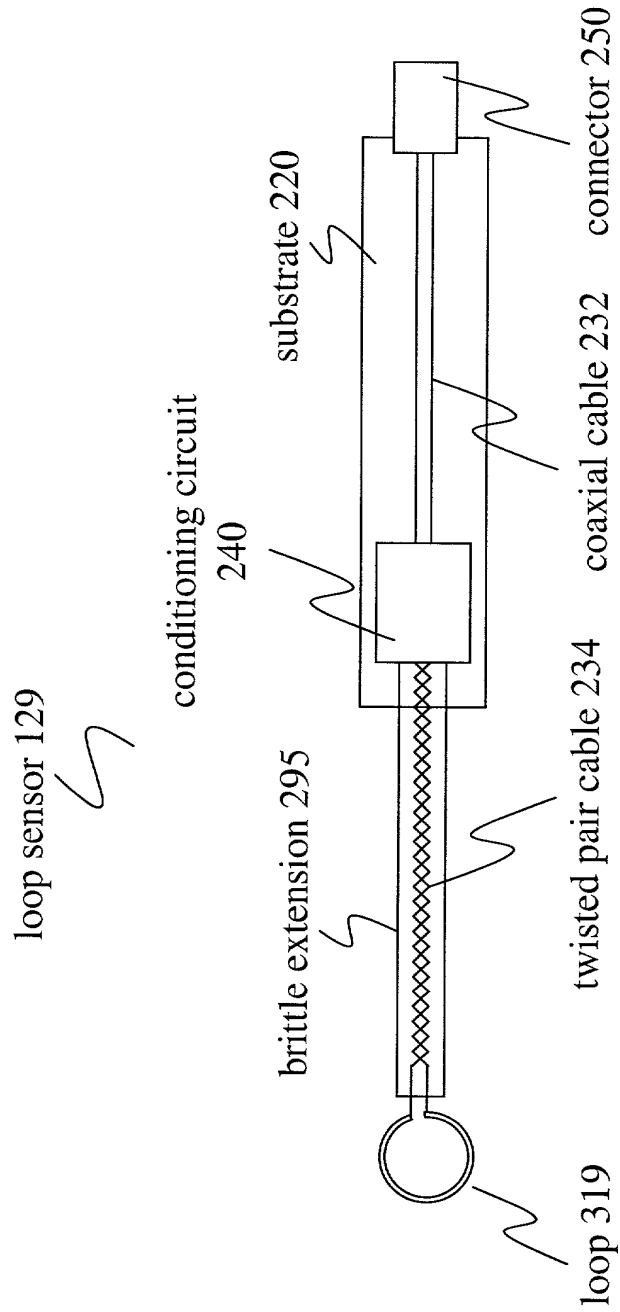


FIG. 14

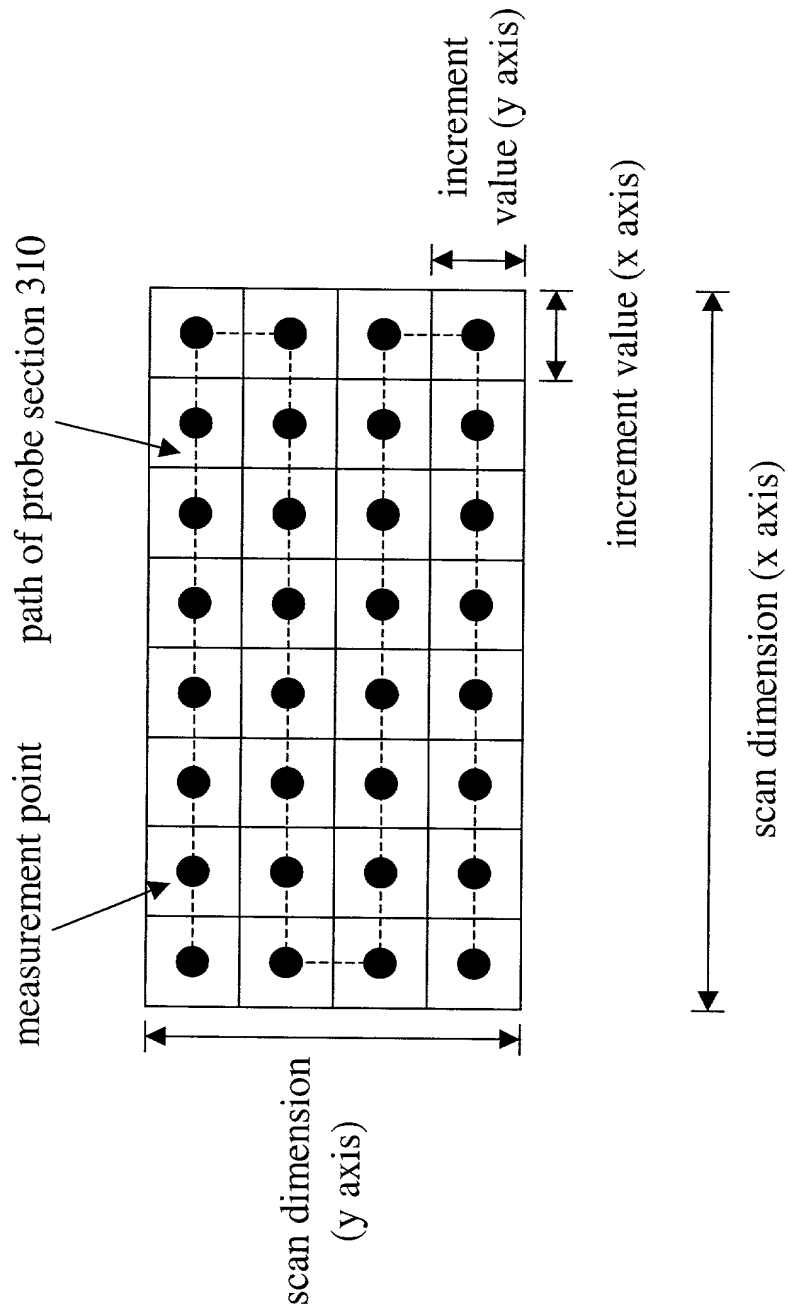


FIG. 15

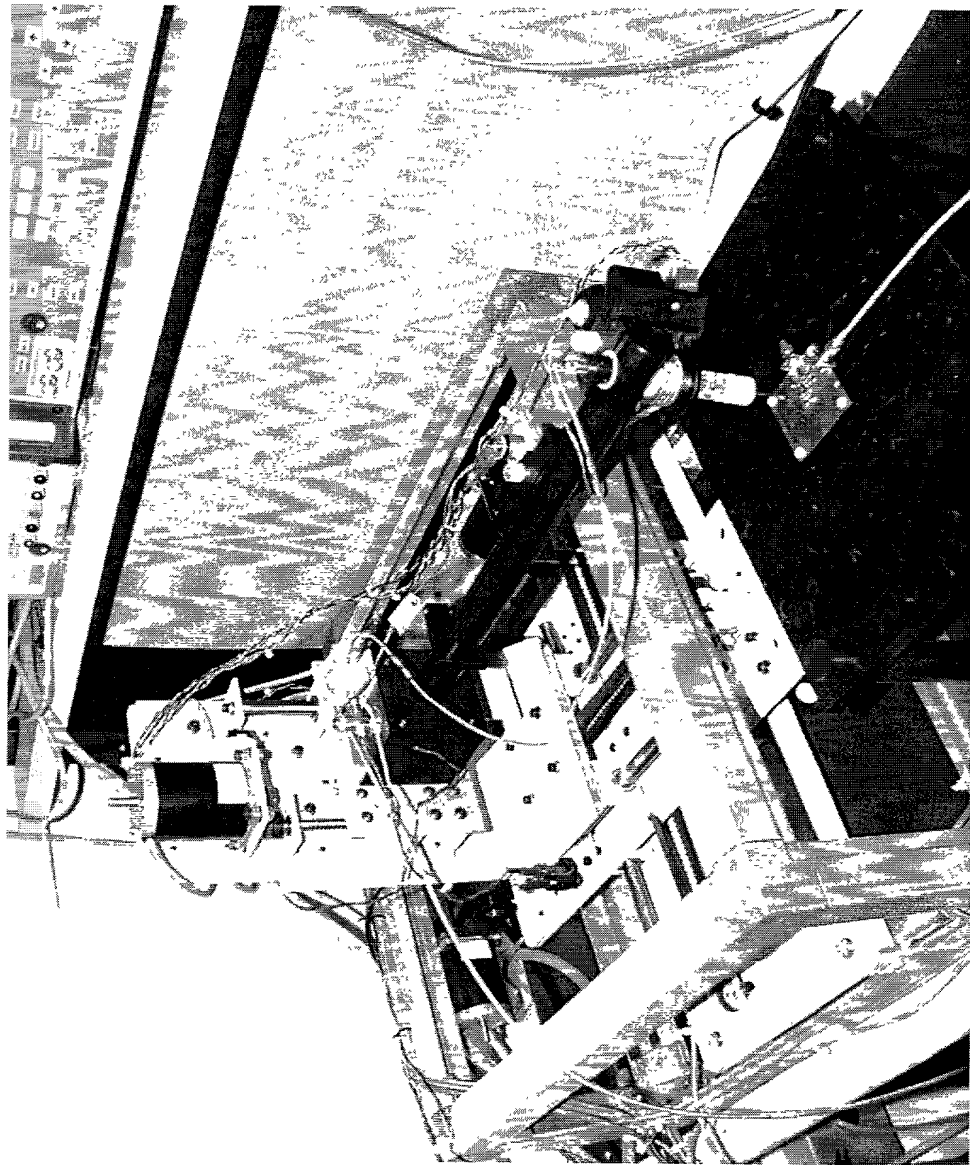


FIG. 16

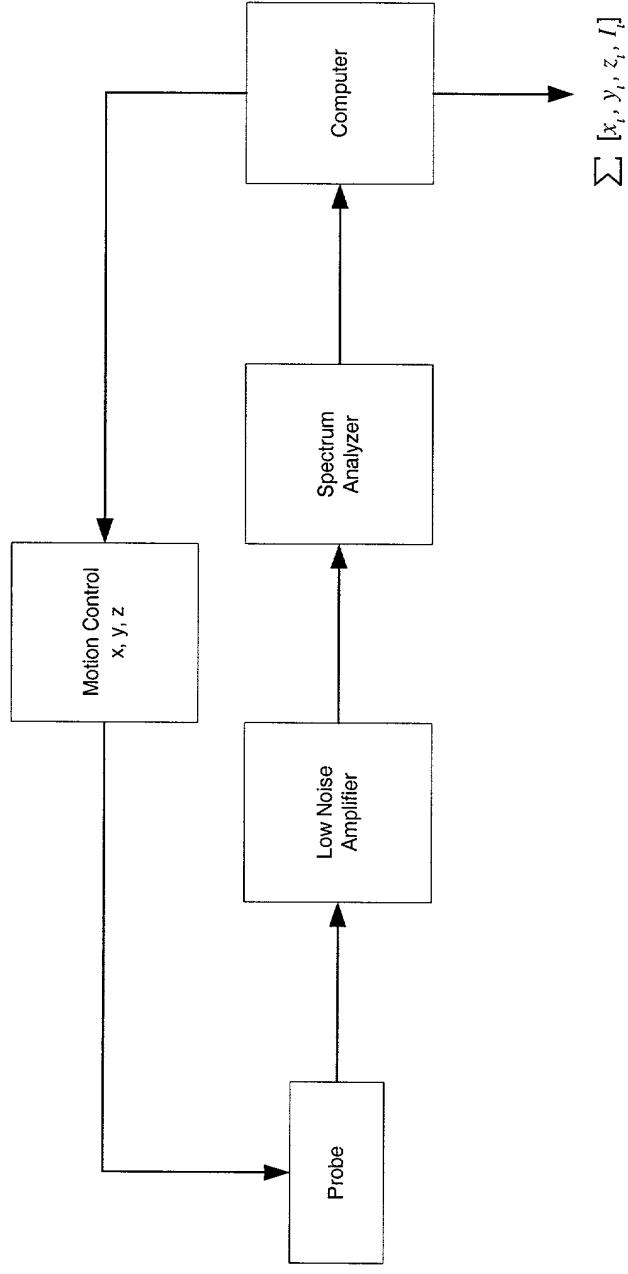


FIG. 17

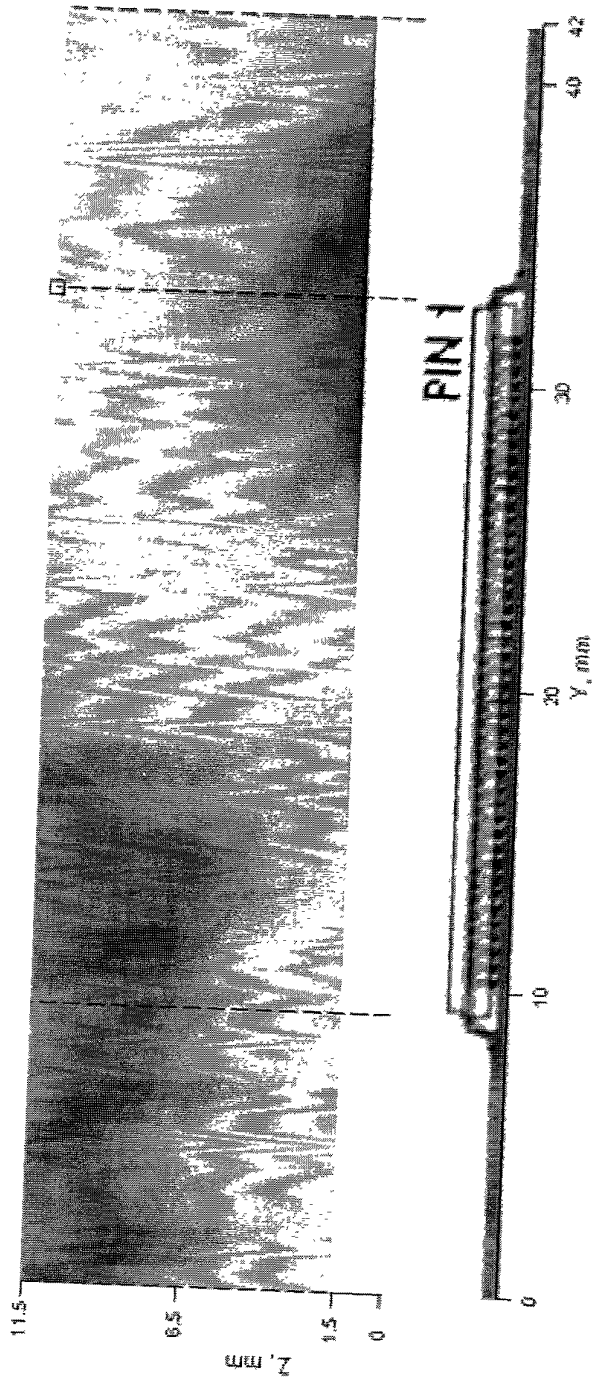


FIG. 18

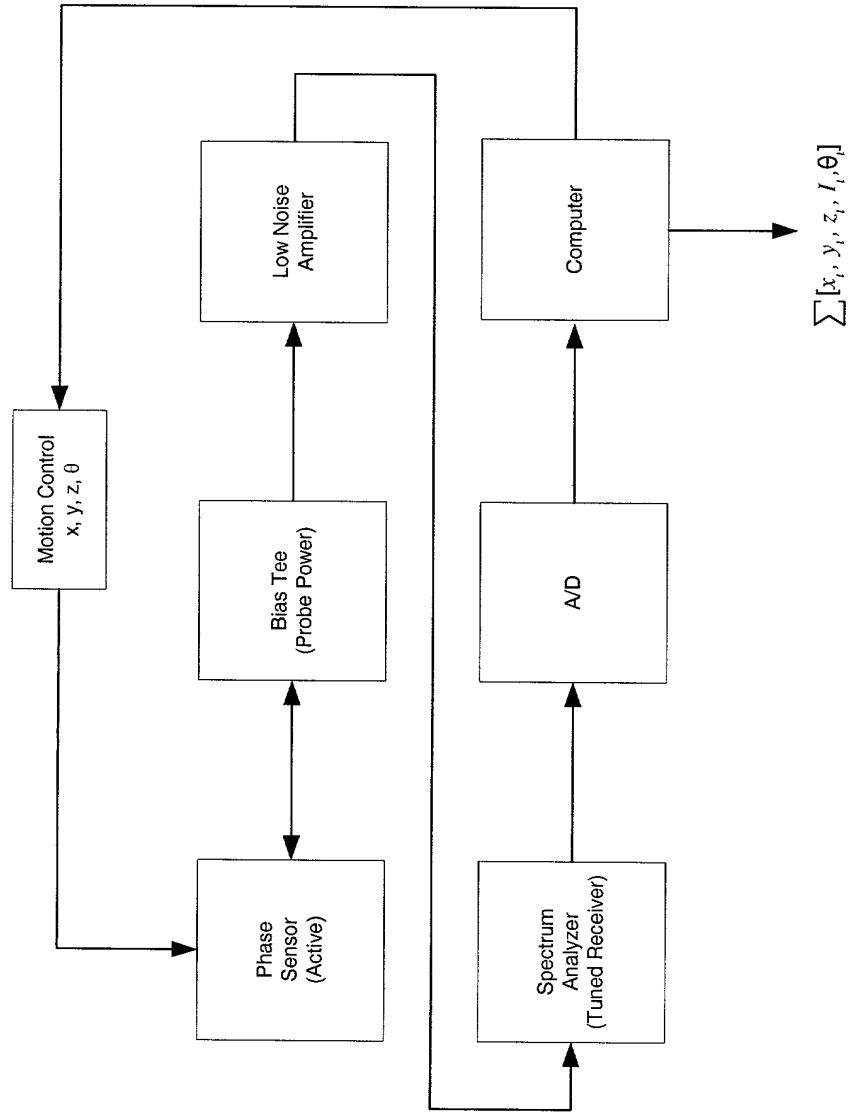


FIG. 19

FIG. 20

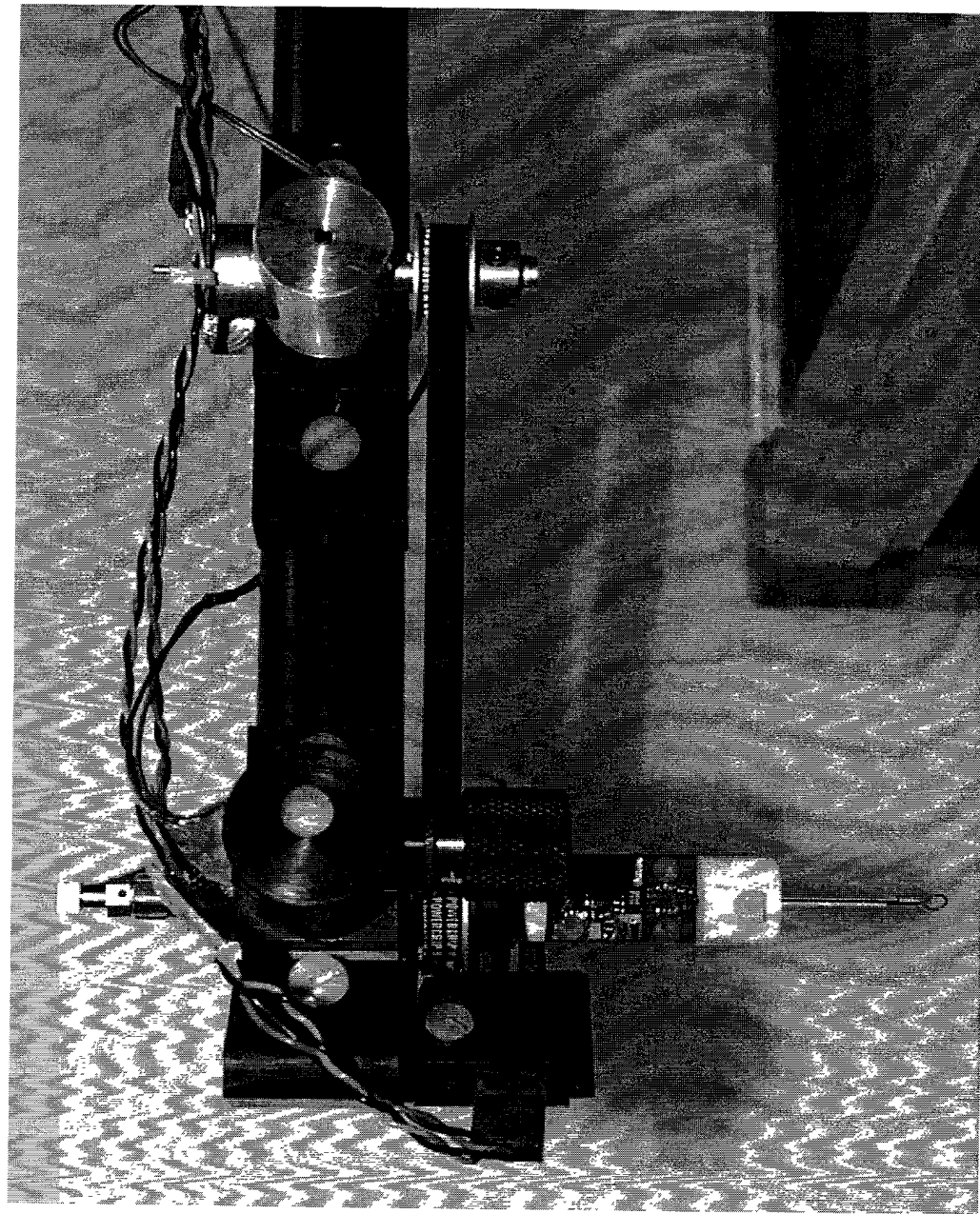


FIG. 20

11/16/99 - Micro stripline is terminated in 50 ohms. Frequency: 1000 MHz
 Probe Type: Magnetic Field. Measurement Increments: dx: 1.94 mm, dy: 1.97 mm, dz: 0 mm
 Number of Planes: 1, at 14.52 mm above DUT. Magnetic Field Intensity Unit: dB uA/m.

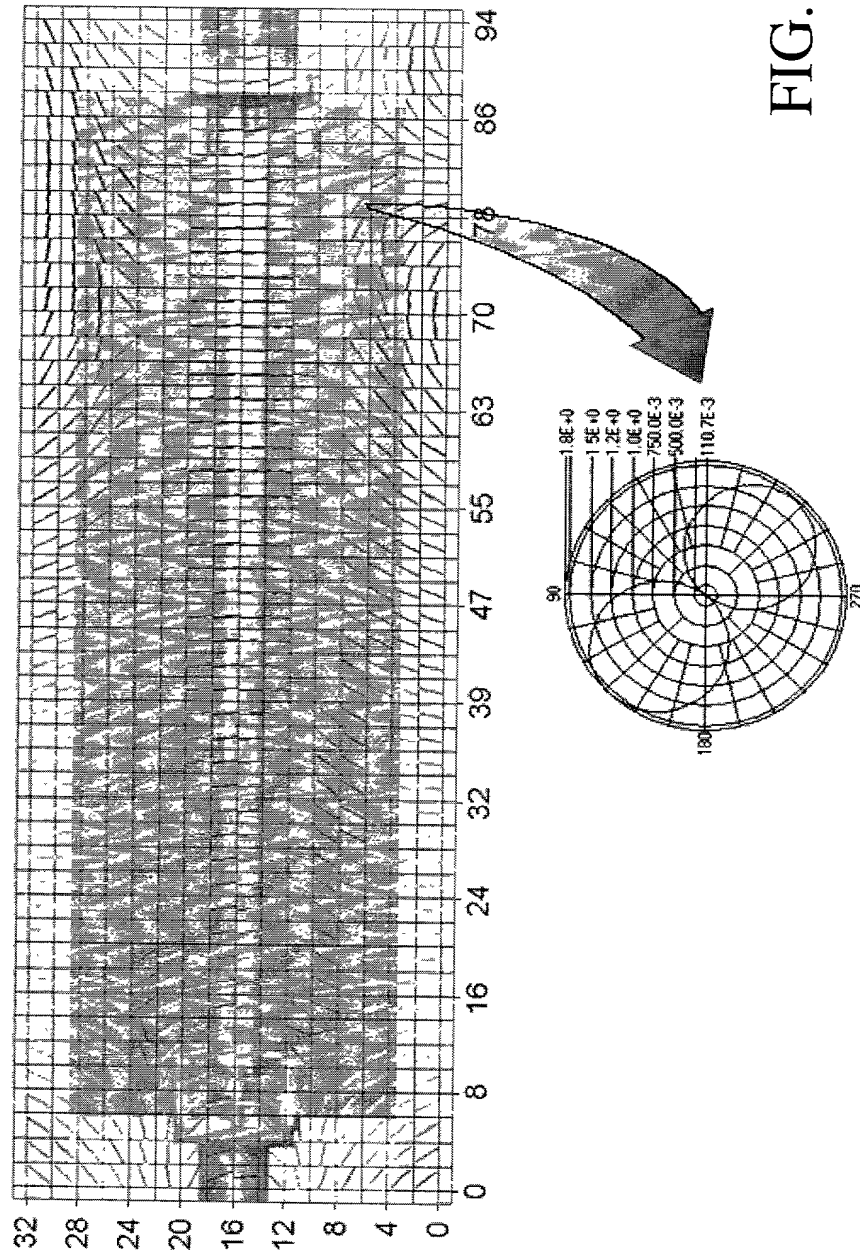
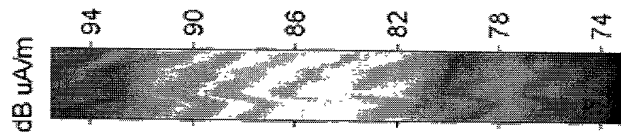


FIG. 21

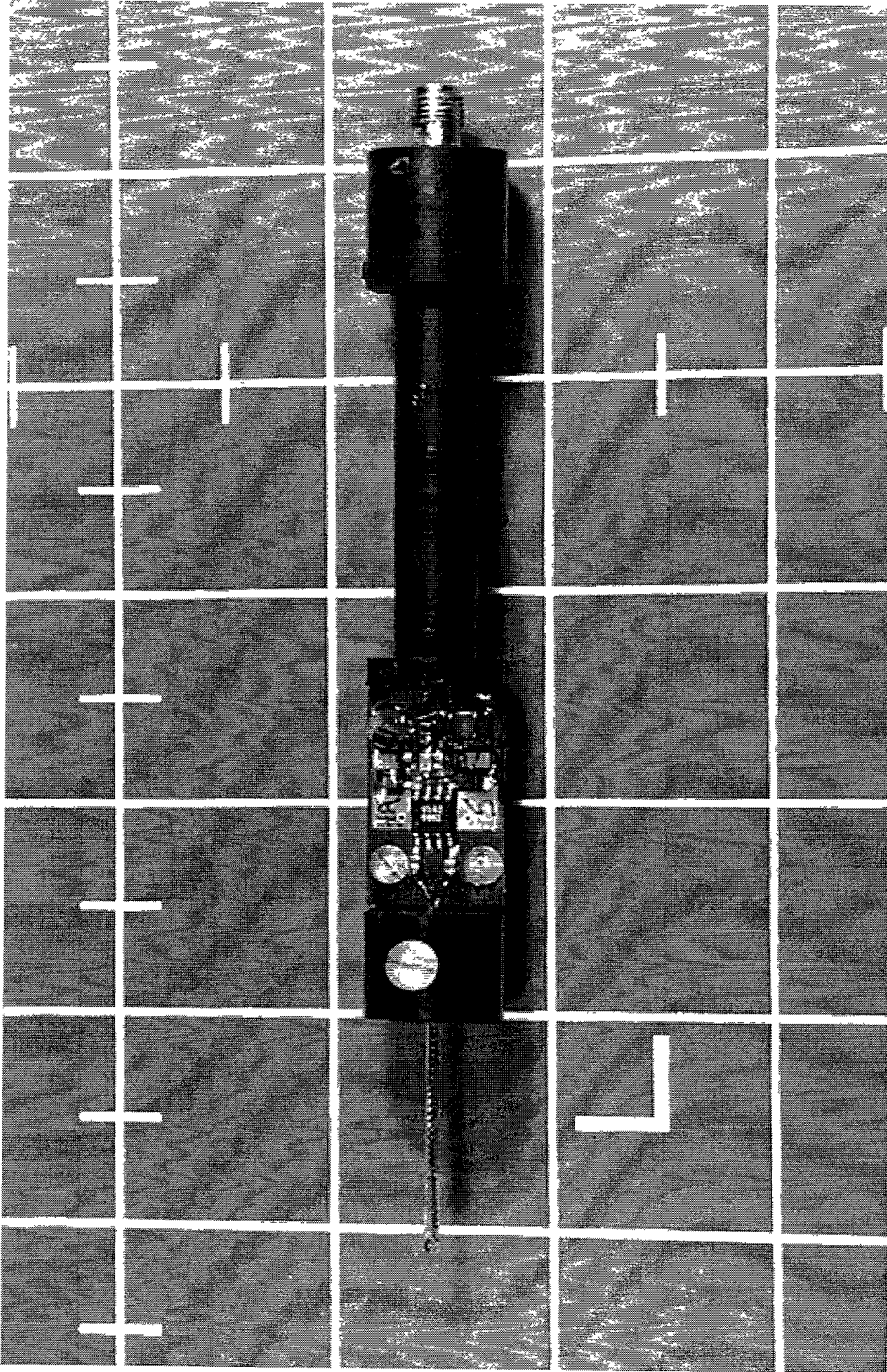


FIG. 22

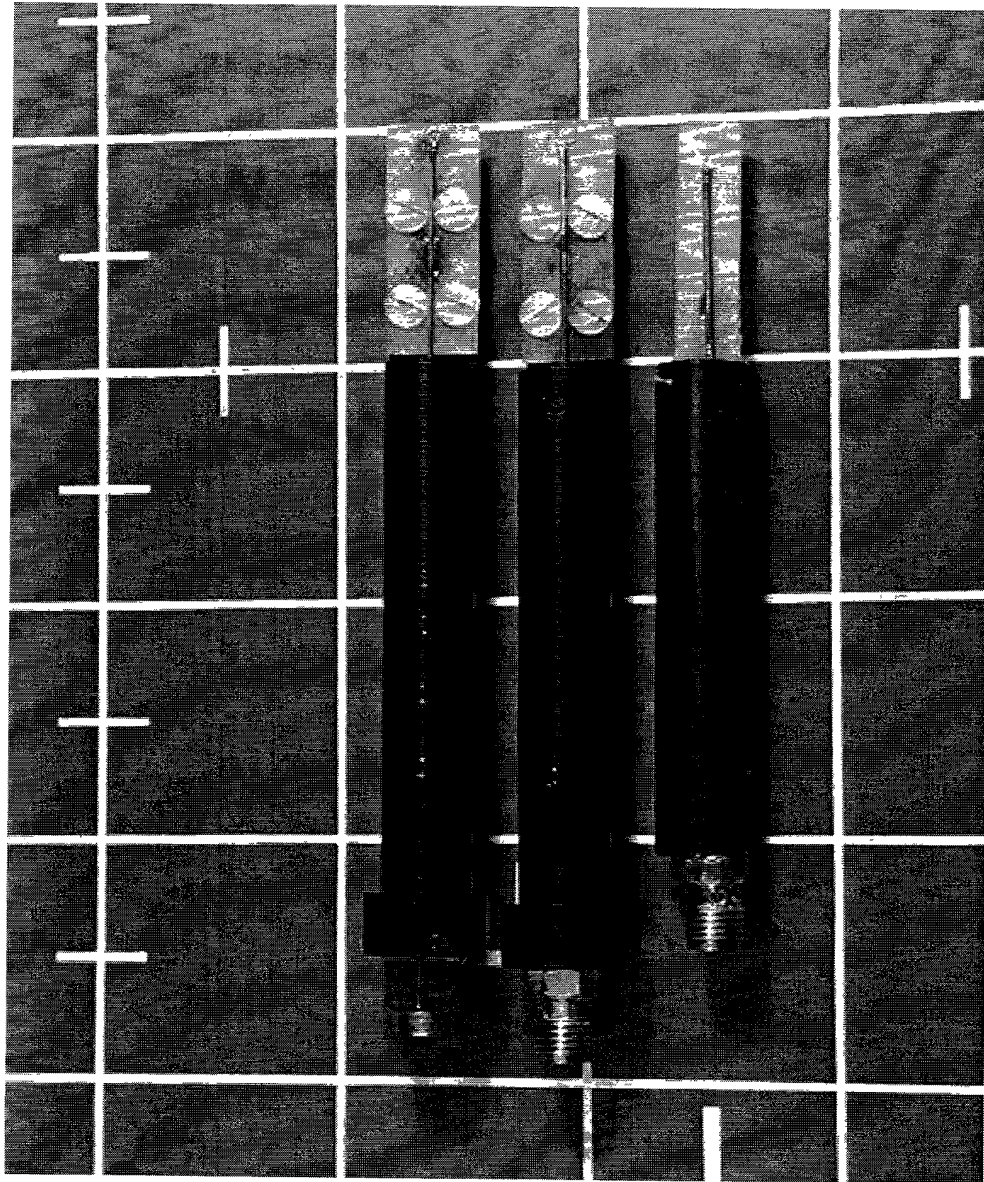


FIG. 23

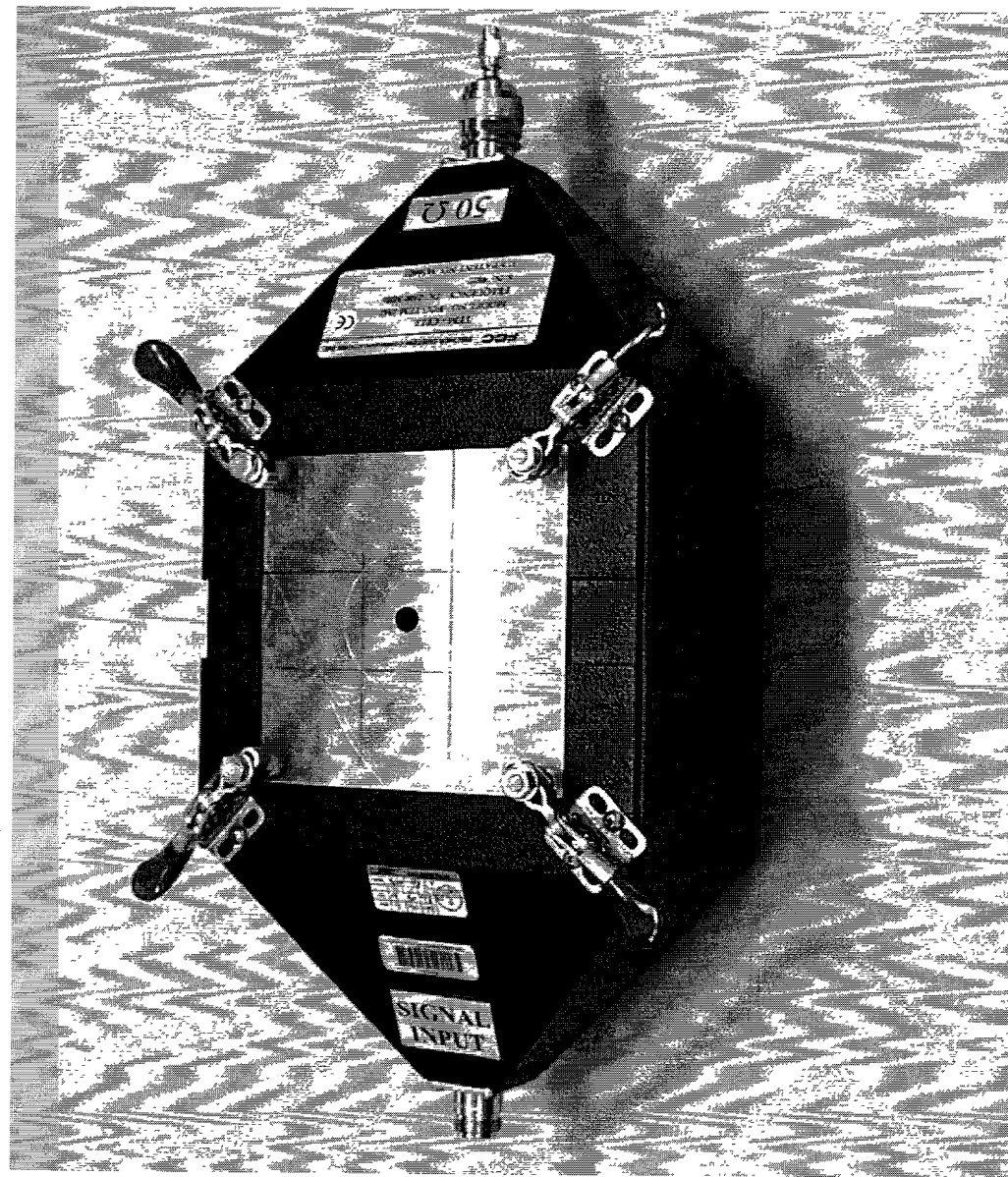


FIG. 24

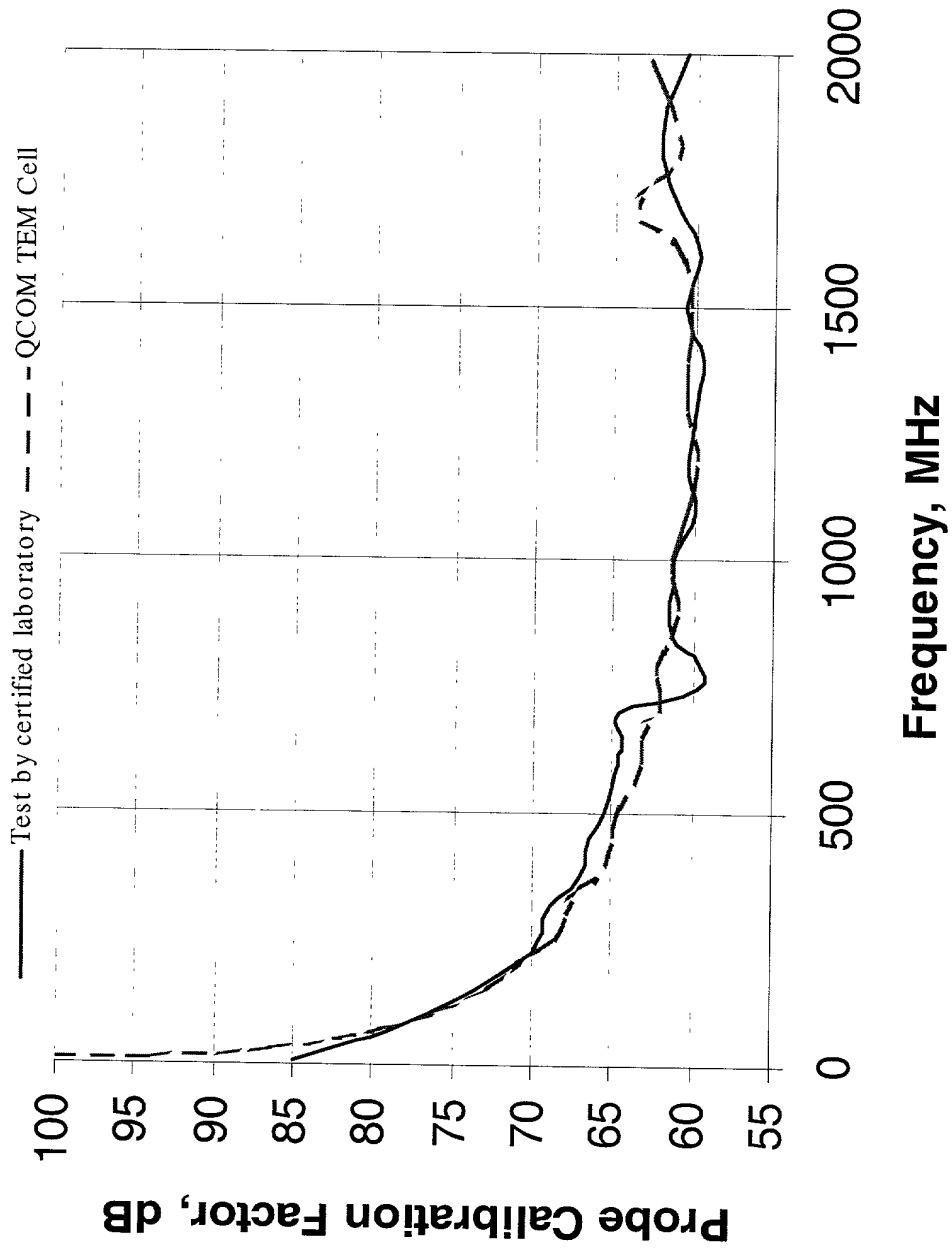


FIG. 25

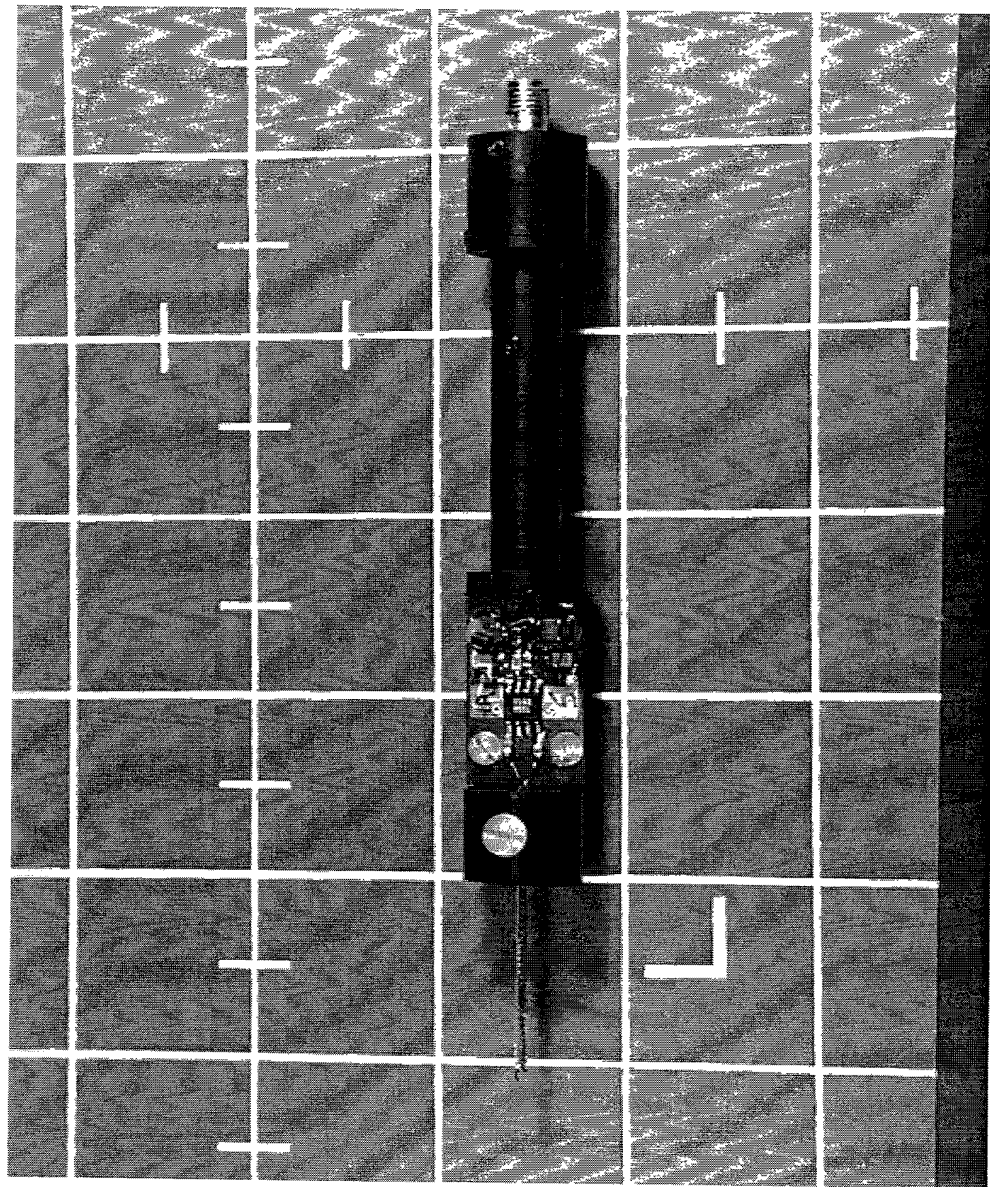


FIG. 26

FIG. 27

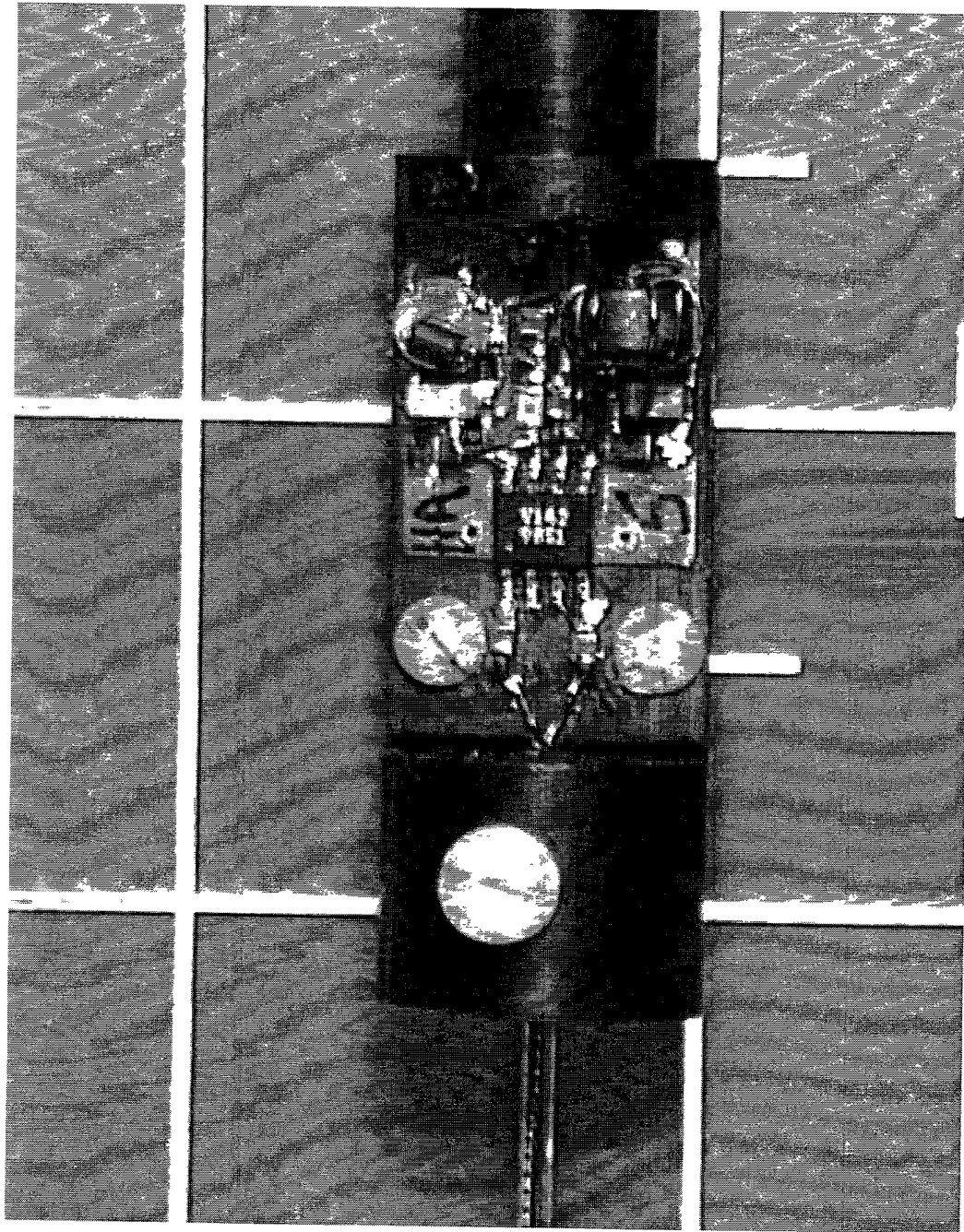
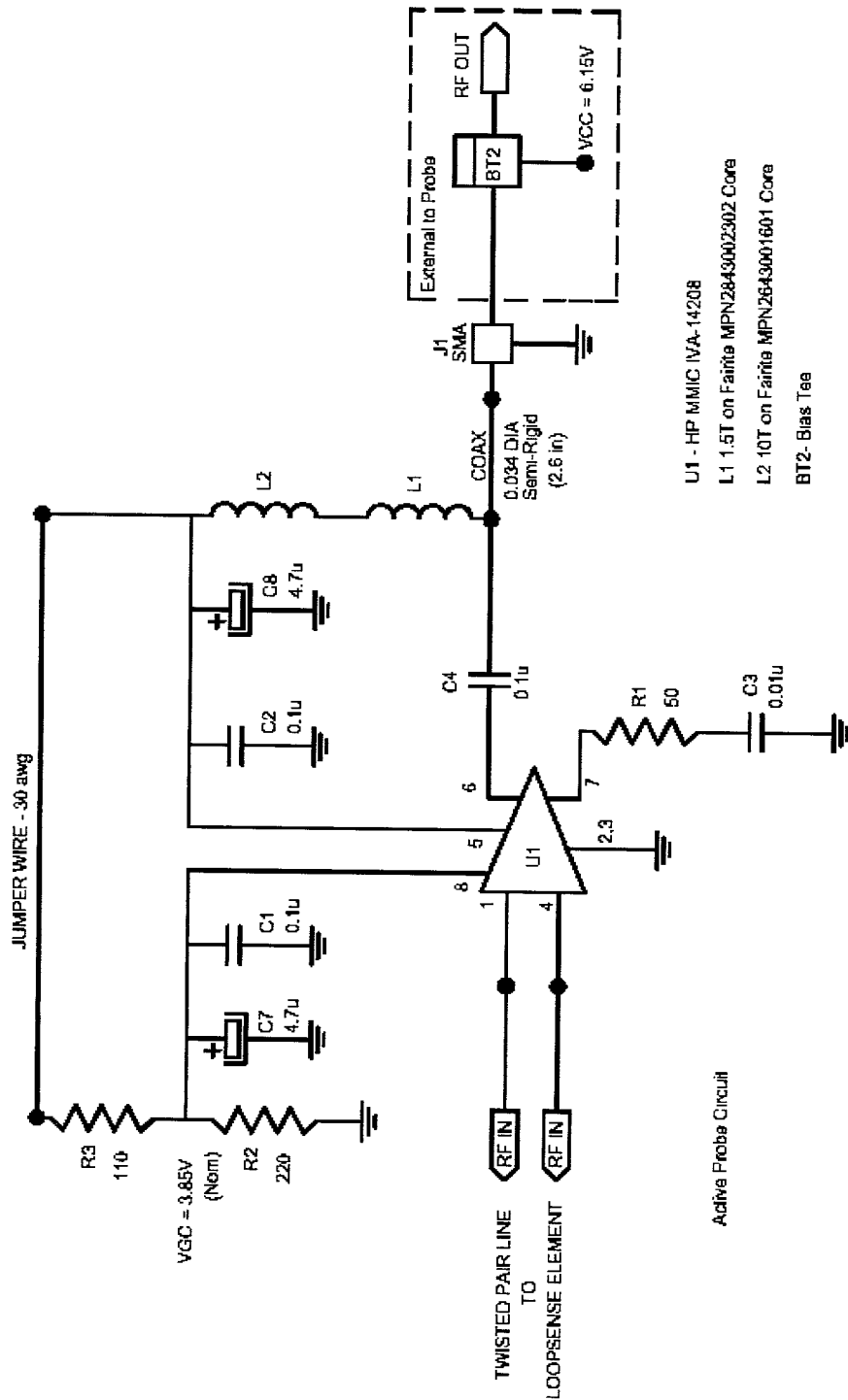


FIG. 27

When using this circuit, be sure to use the correct components and values as specified in the diagram. The circuit is designed for a 3.85V VCC and a 6.15V VCC. The components are listed in the table below.



- U1 - HP MMIC IVA-14208
- L1 1.5T on Fairite MPN2843002302 Core
- L2 10T on Fairite MPN2643001601 Core
- BT2- Bias Tee

FIG. 28

Page 1 of 1
 Date: 11/29/99
 Time: 13:29:41
 File: 11-1994.dB

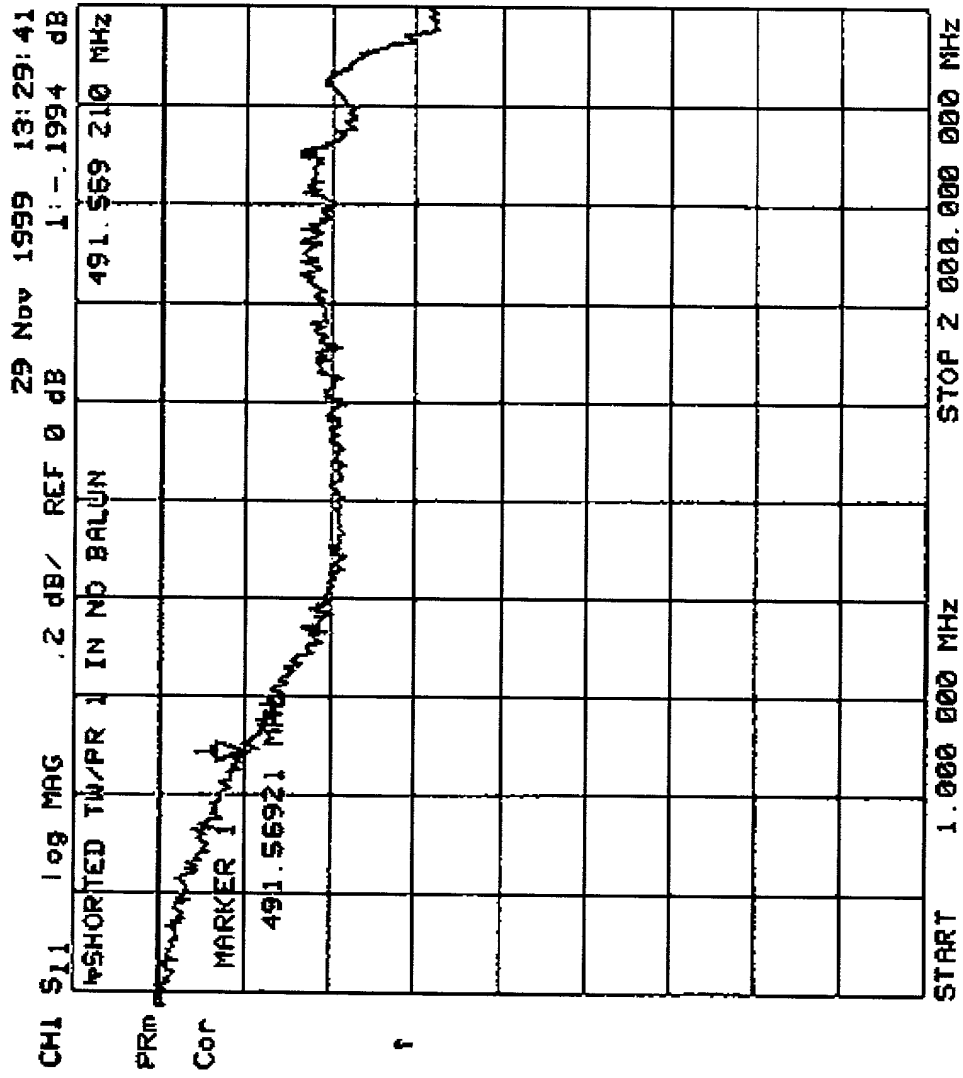


FIG. 29

FIG. 30

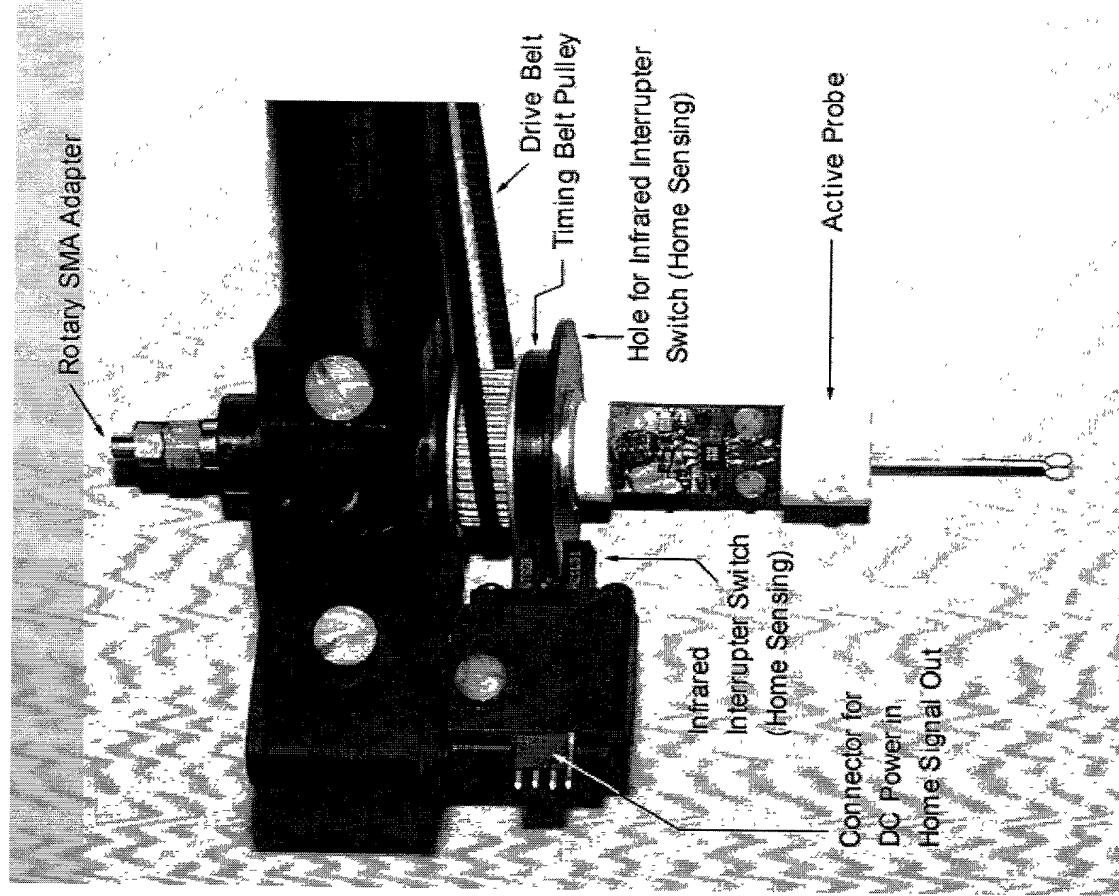


FIG. 31

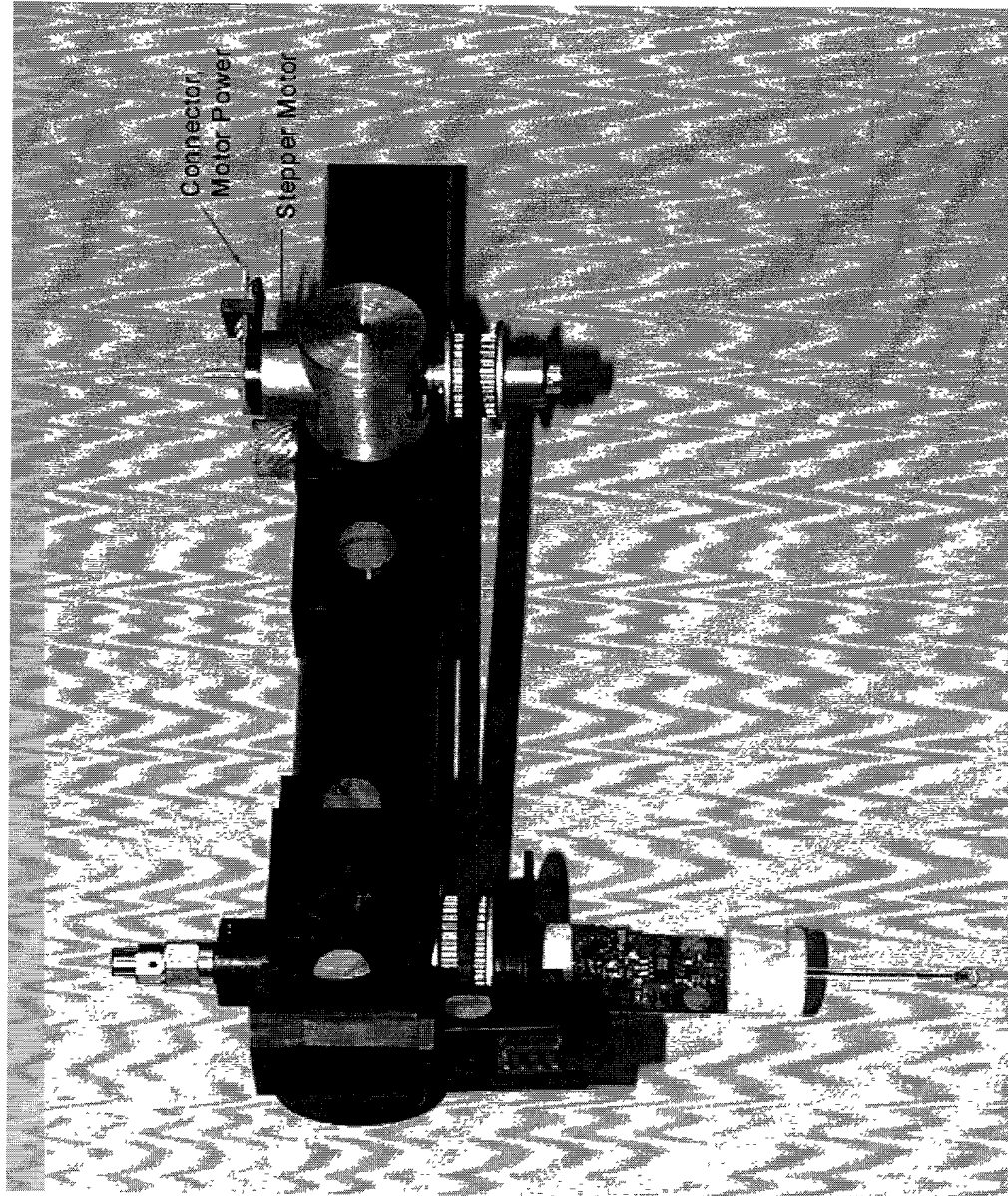


FIG. 31

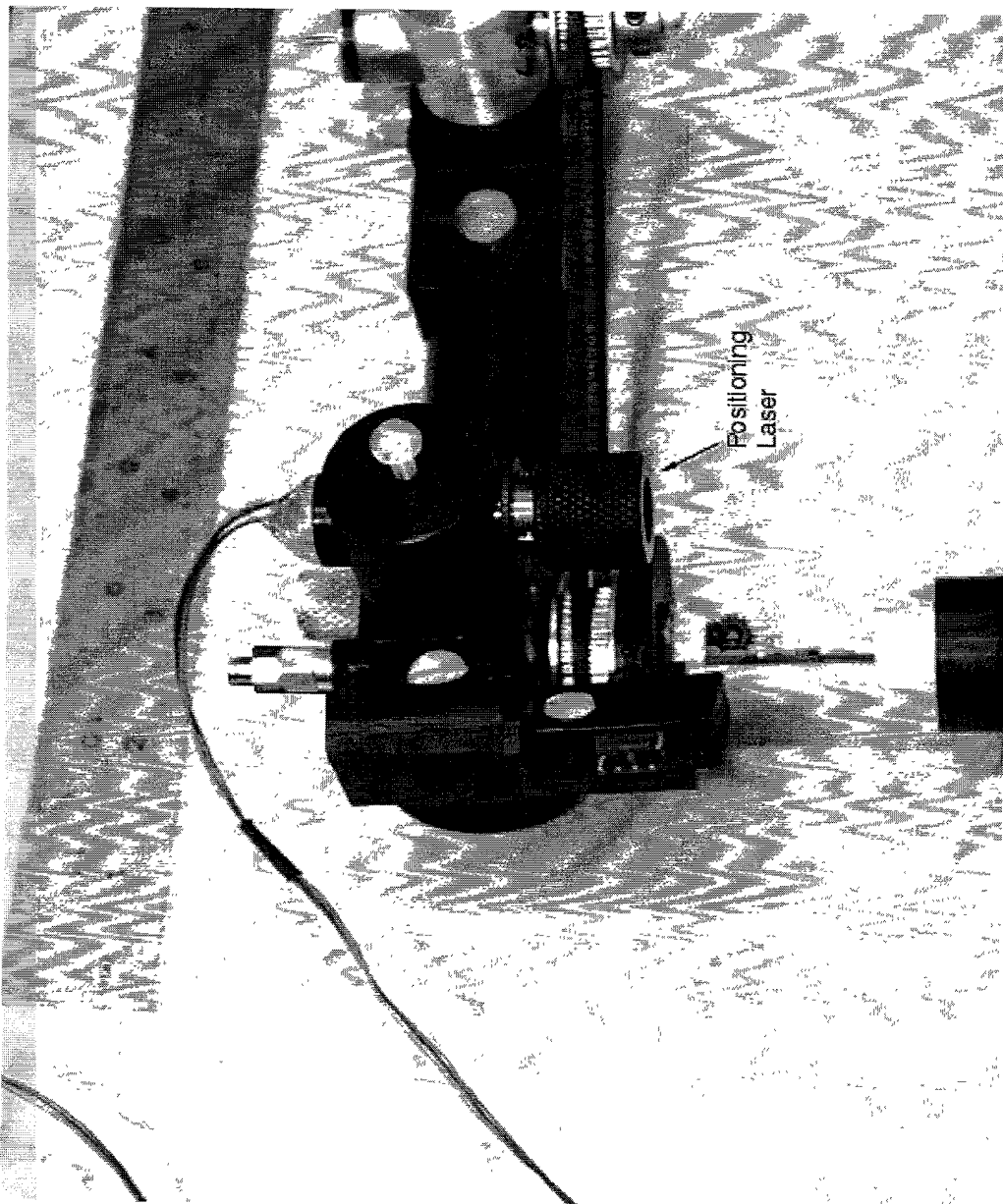


FIG. 32

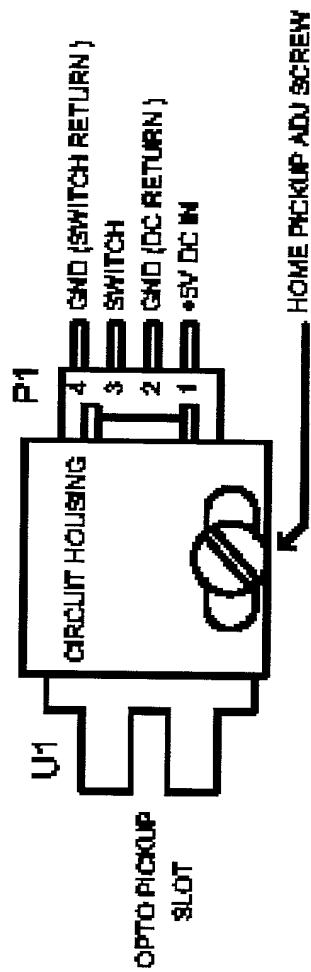
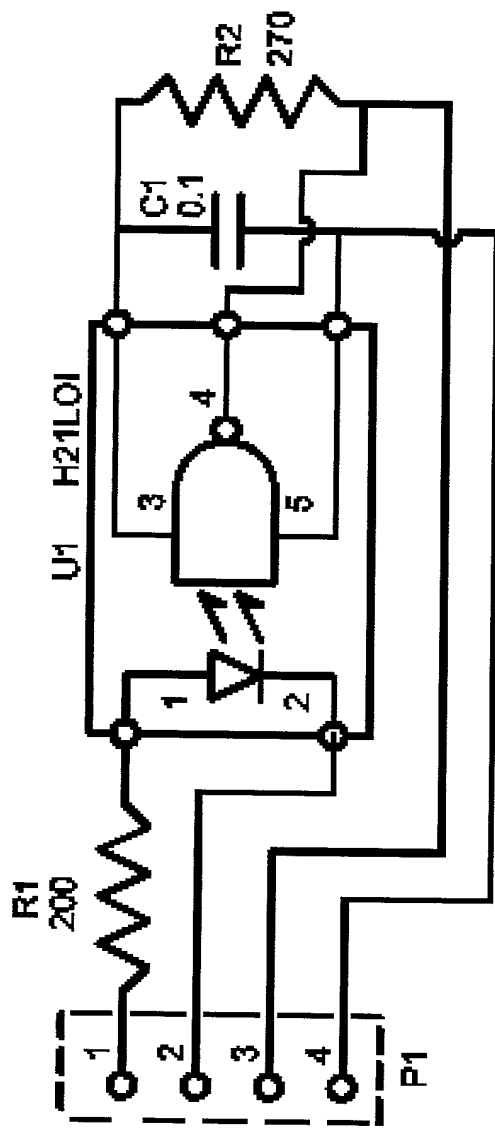


FIG. 33

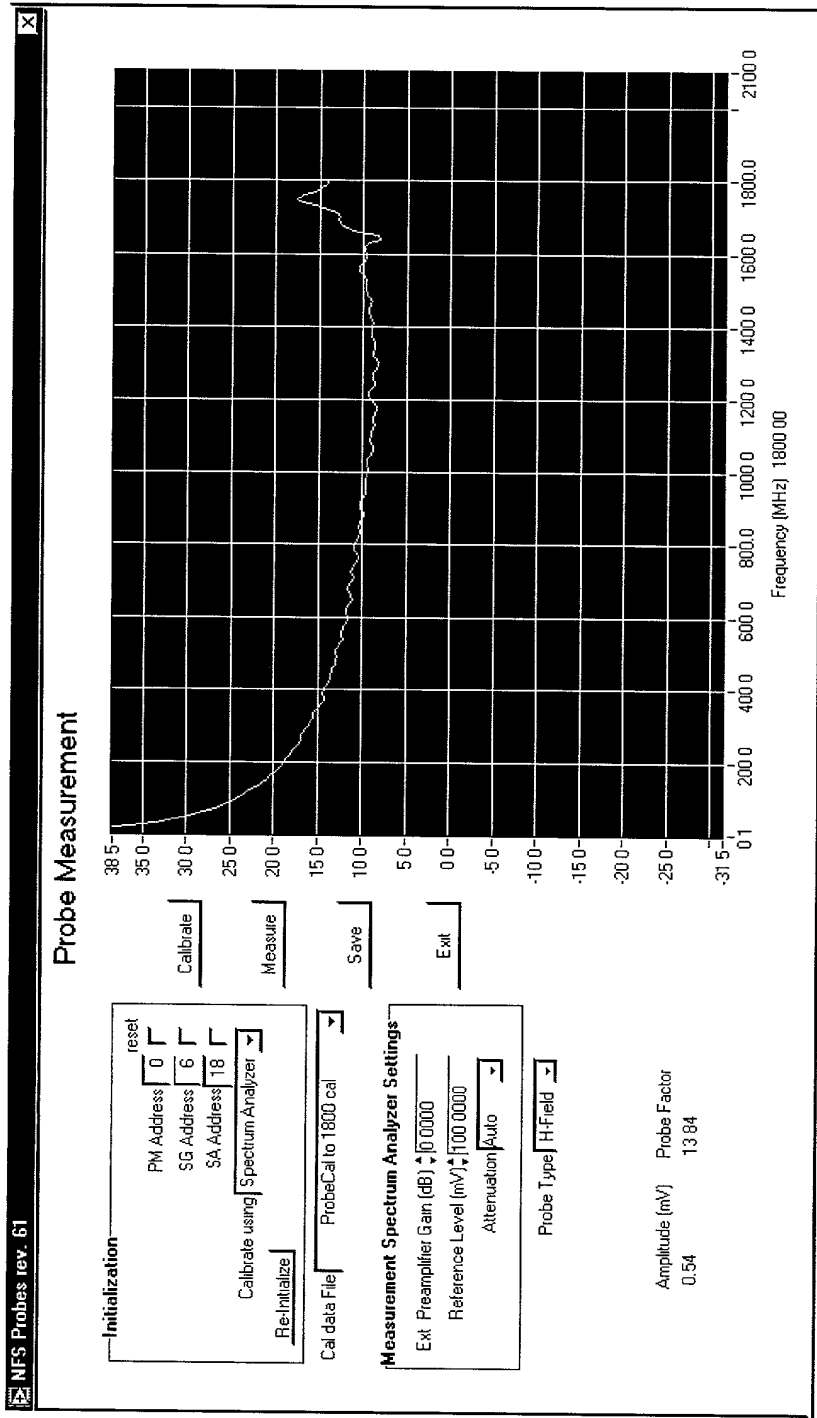


FIG. 34

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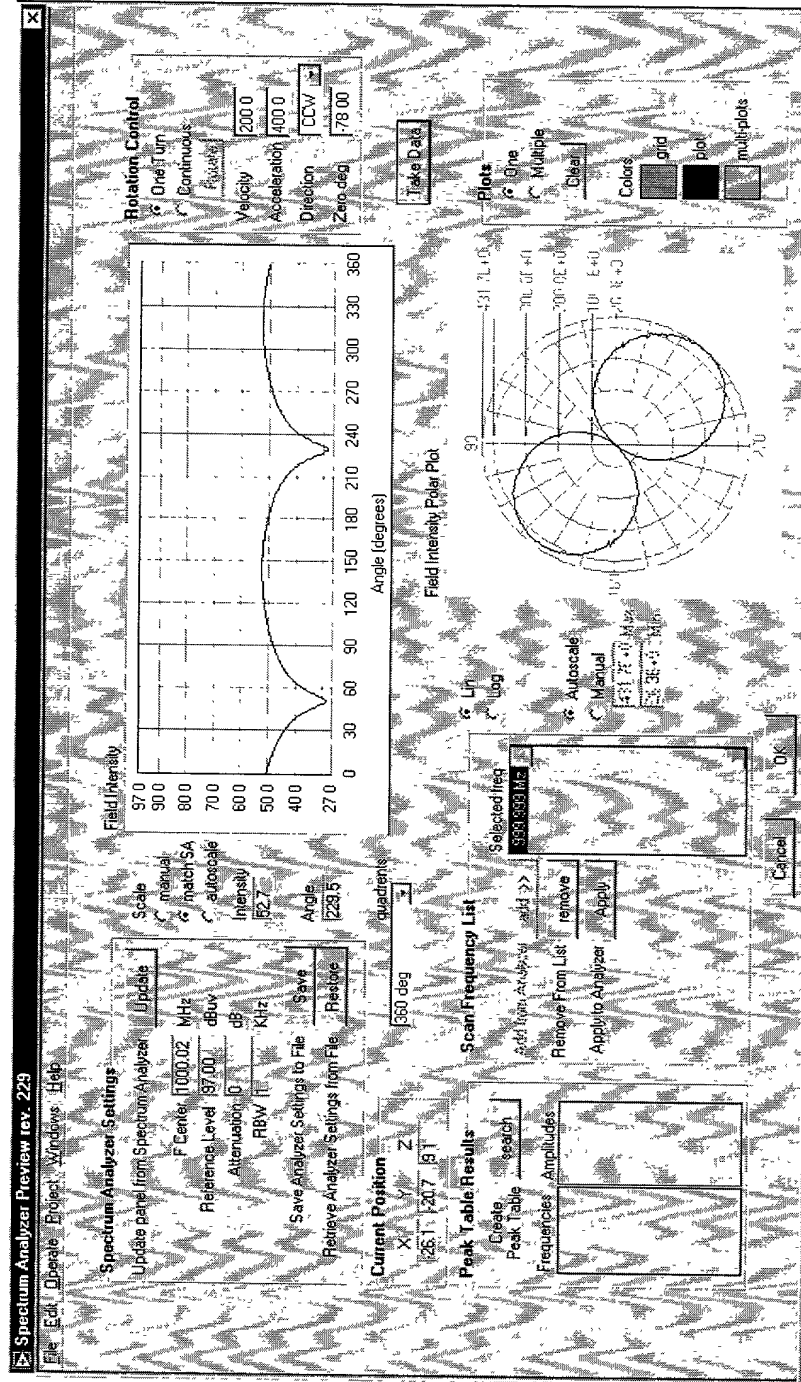


FIG. 35

upg (p)g ggg ggg ggg 30 upg upg upg upg upg upg upg upg upg upg
 p.

Current distribution on a micro stripline.
 The Micro Stripline is terminated in 50 ohms Frequency, 1000 MHz
 Probe Type Magnetic Field Measurement Increments dx 1.97 mm, dy 1.94 mm, dz 0 mm
 Number of Planes 1, at 14.37 mm above DUT Magnetic Field Intensity Unit dB uA/m.

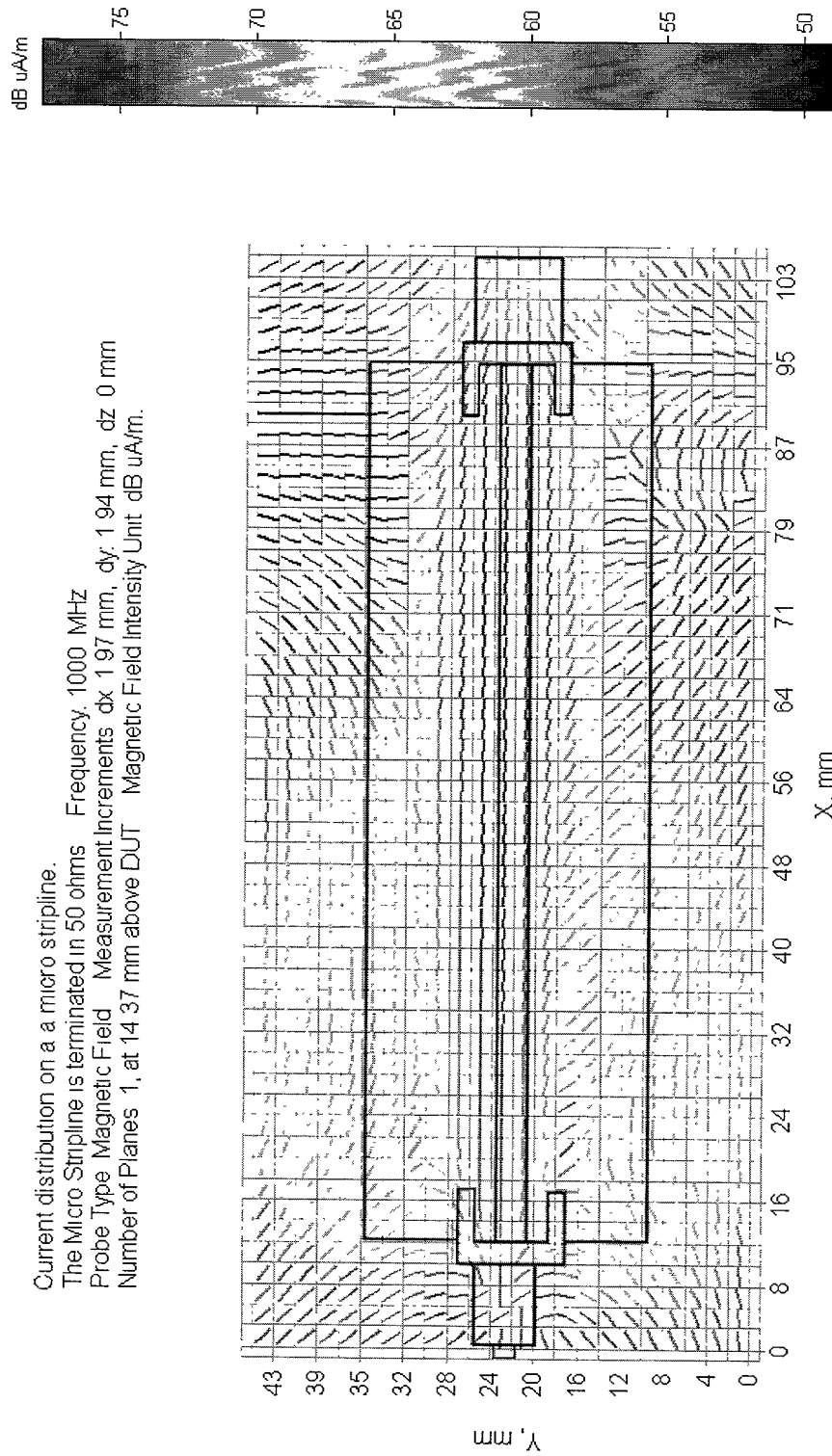
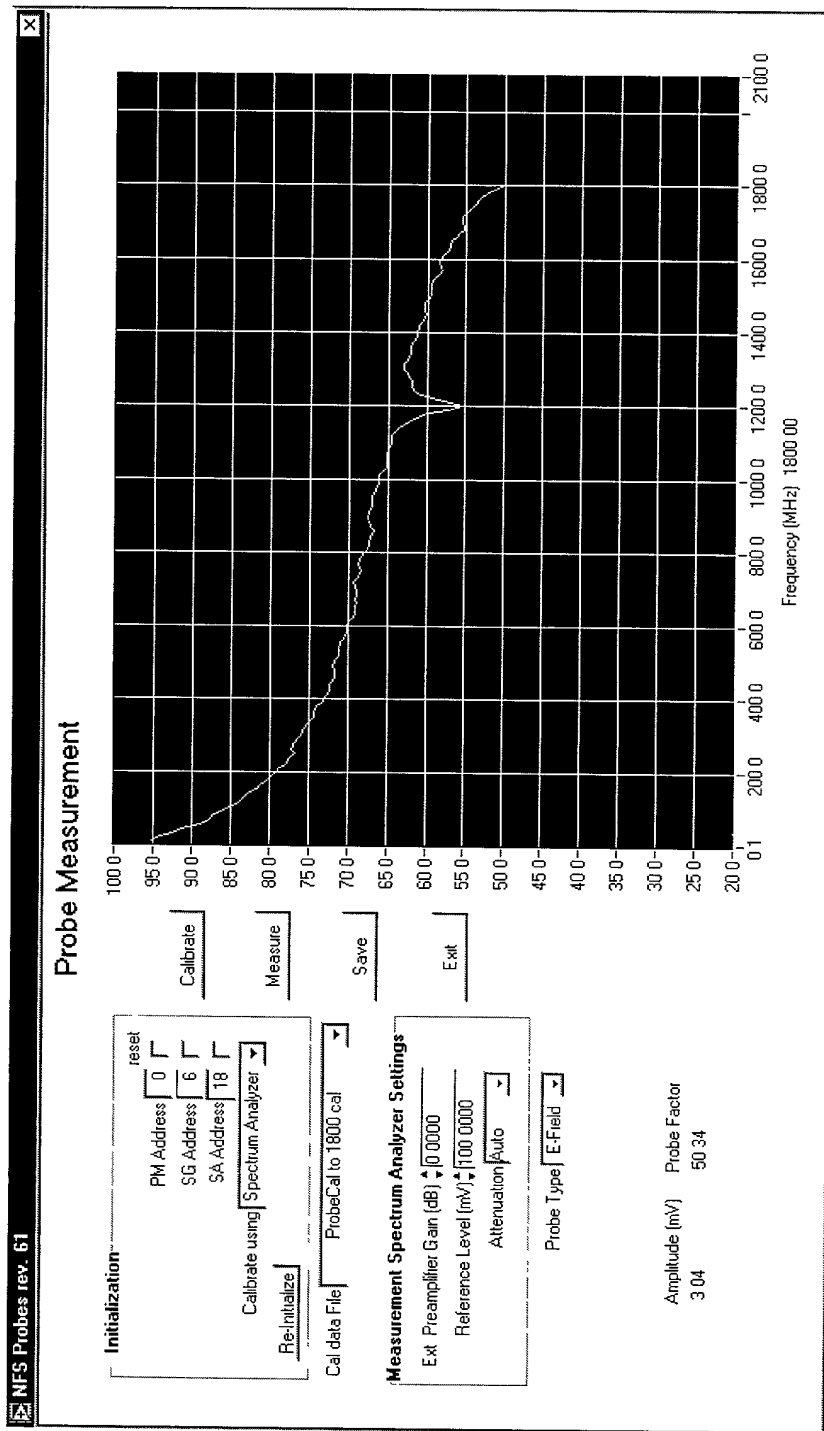


FIG. 36



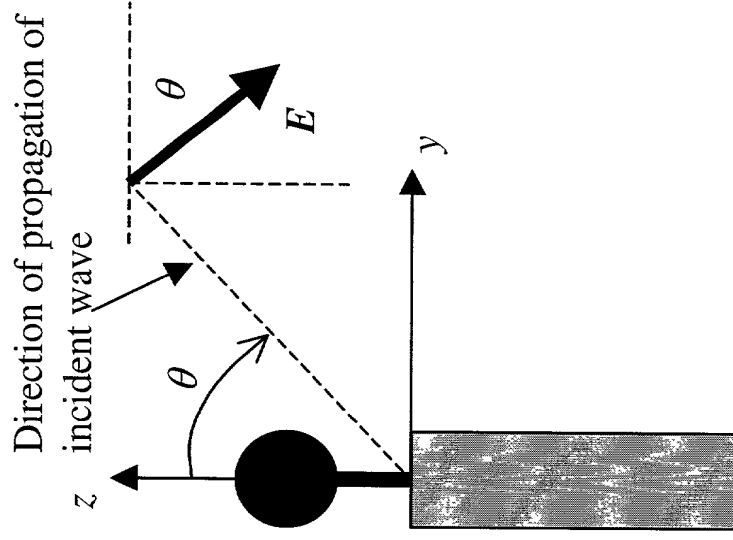


FIG. 38

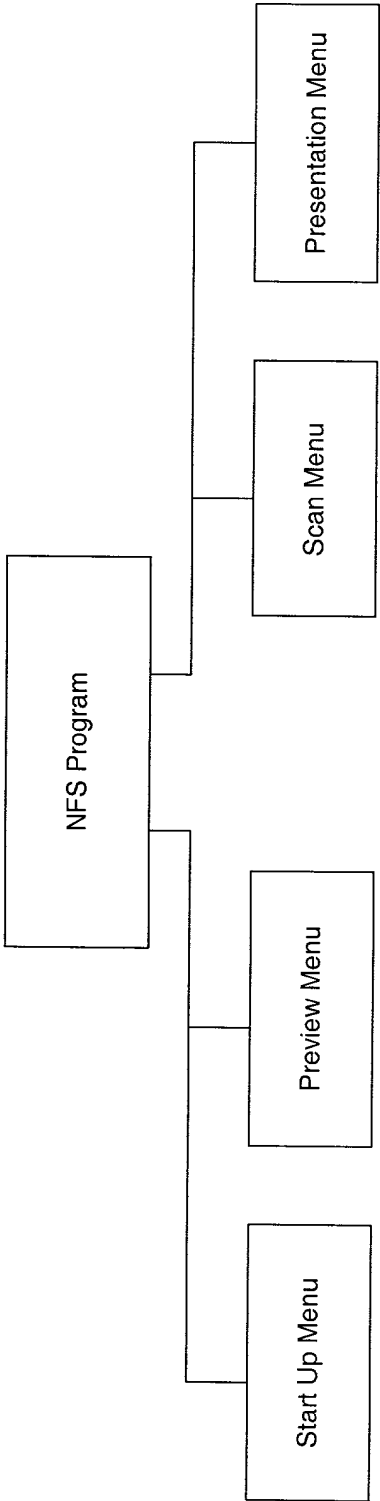


FIG. 40

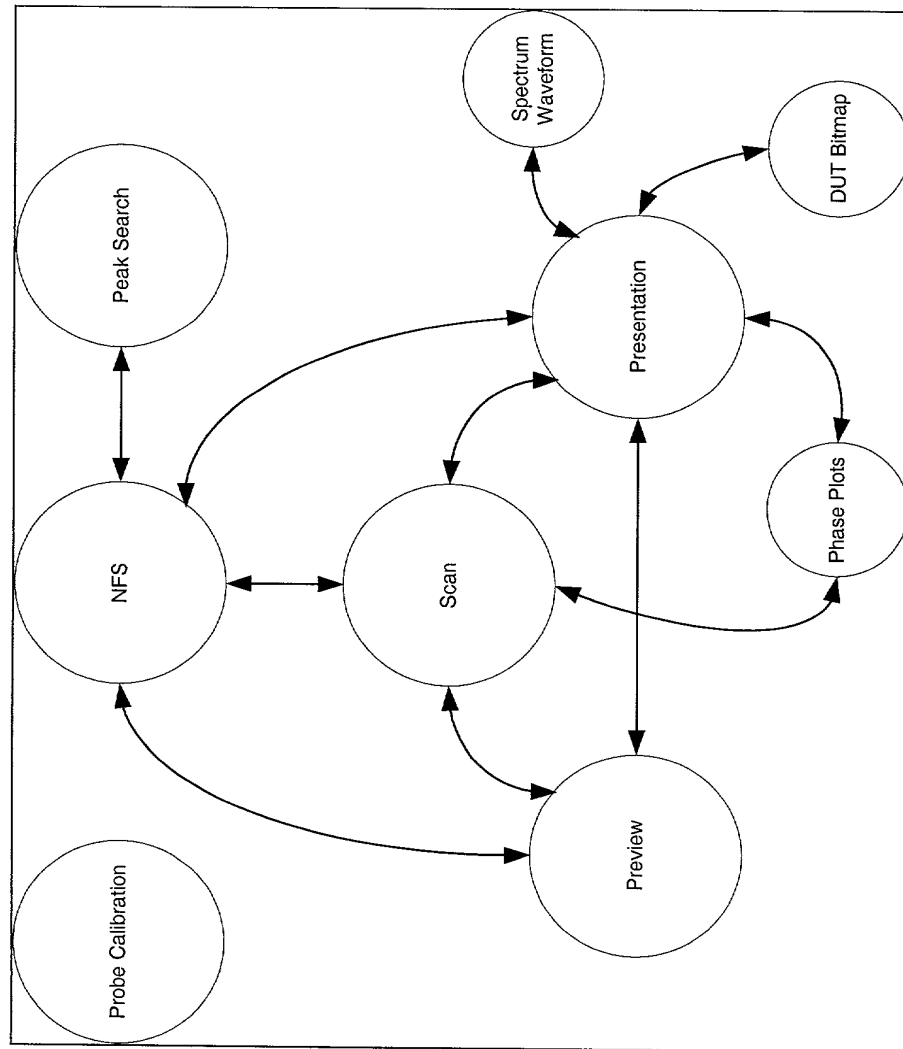


FIG. 41

FIG. 42

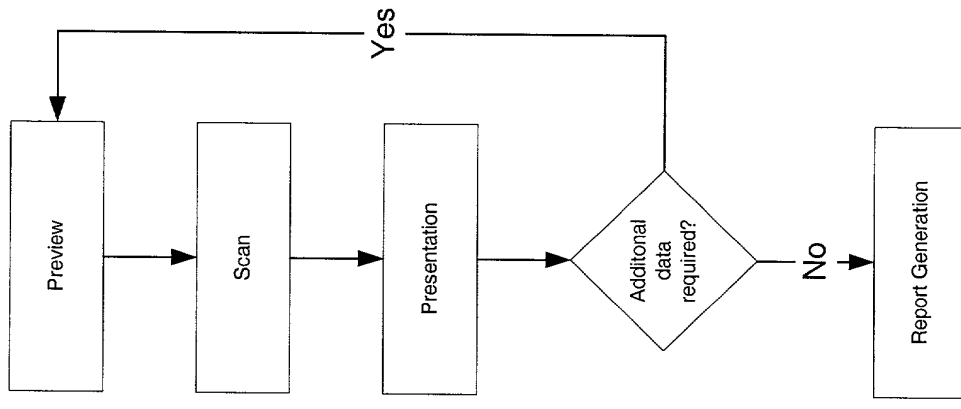




FIG. 44

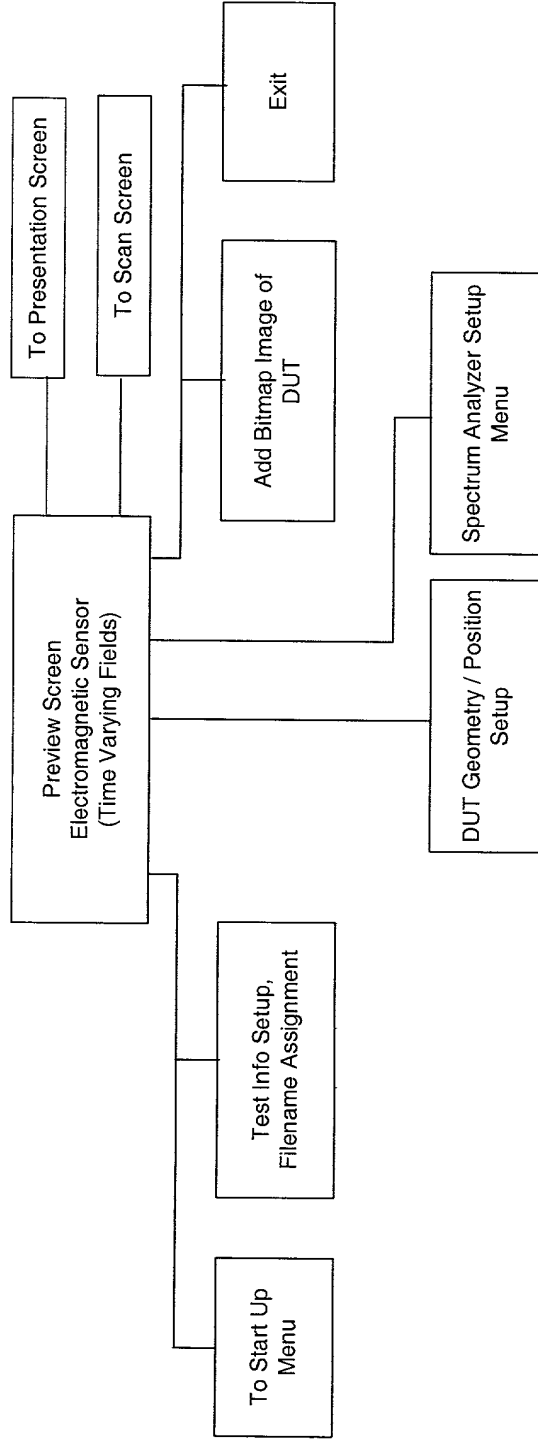


FIG. 45

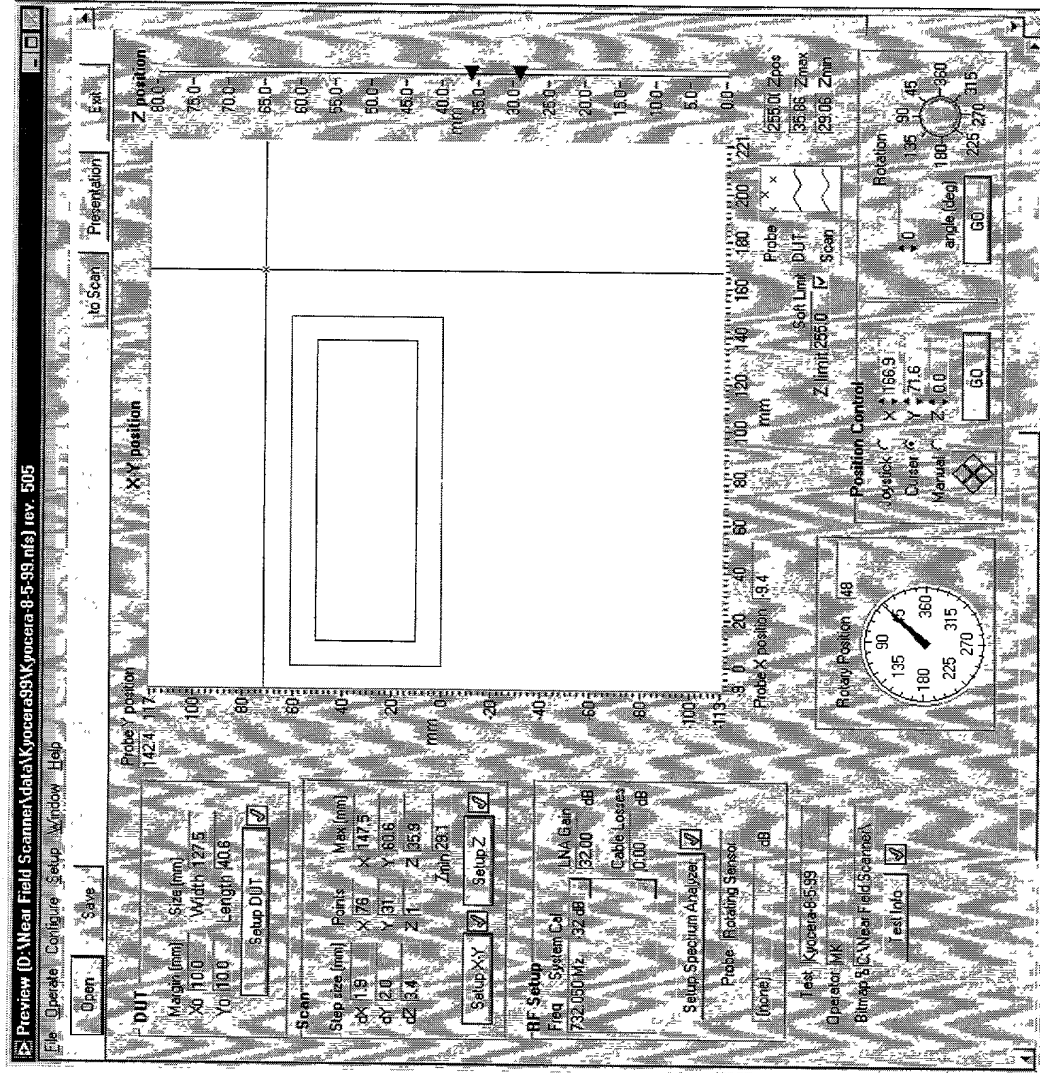


FIG. 46

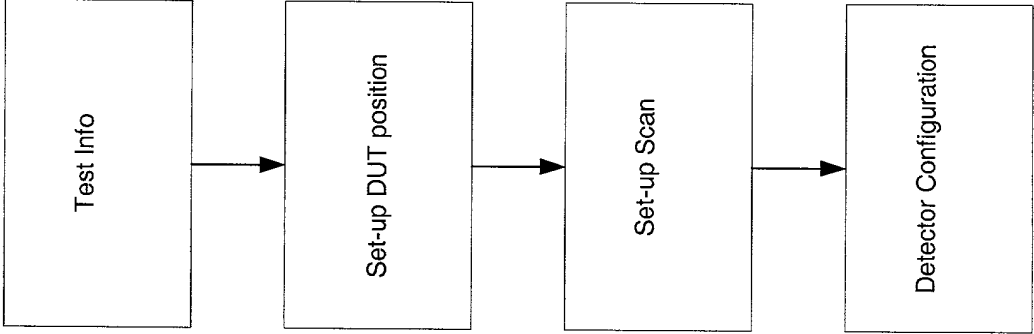


FIG. 47

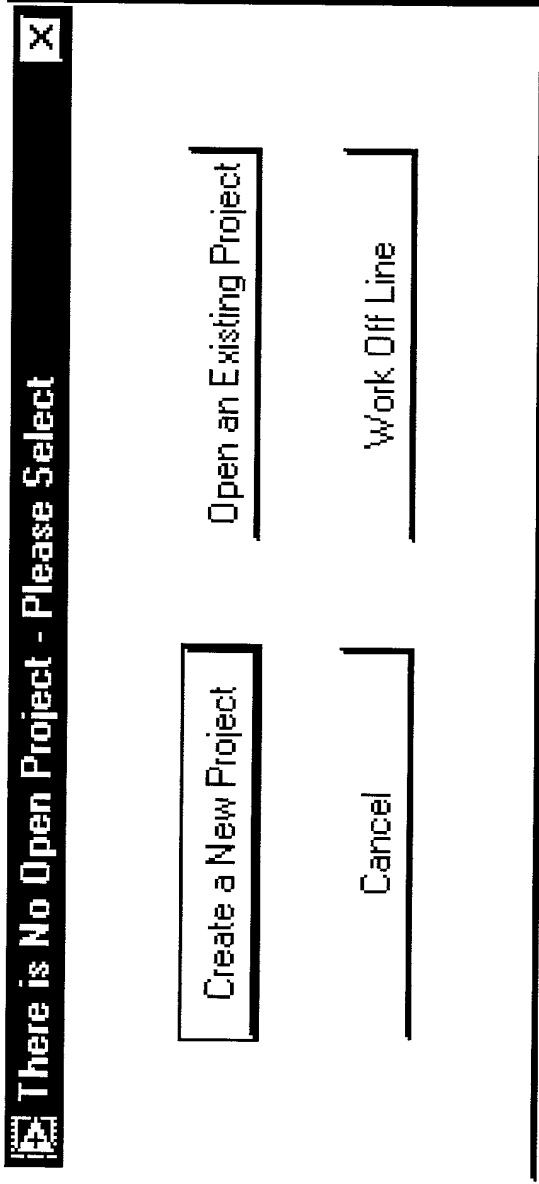


FIG. 48

Edit Probe Transfer Factor rev. 15

Probe Name

Ball-2

Units

dB uV/m

Probe correction equation

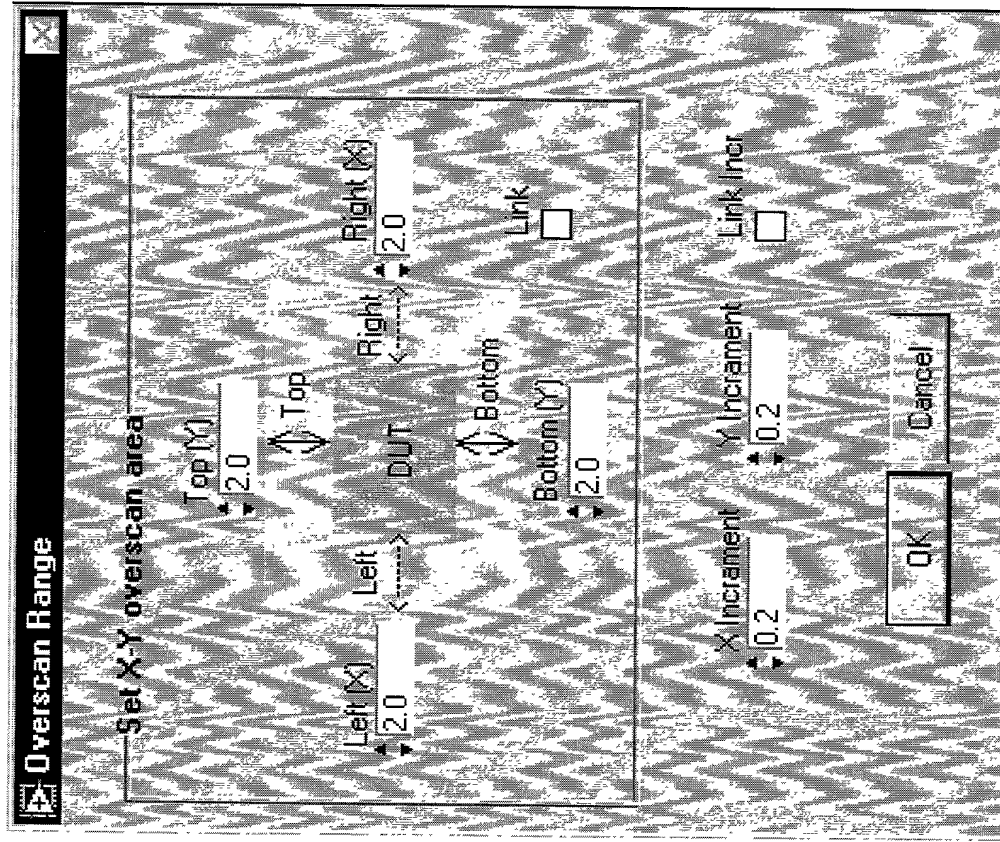
$$CF = 101.334846 - (0.19858186 * f) + (0.00048578 * f^2) - (5.7022E-7 * (f^3)) + (3.0722E-10)$$

Cancel

OK

FIG. 49

FIG. 50



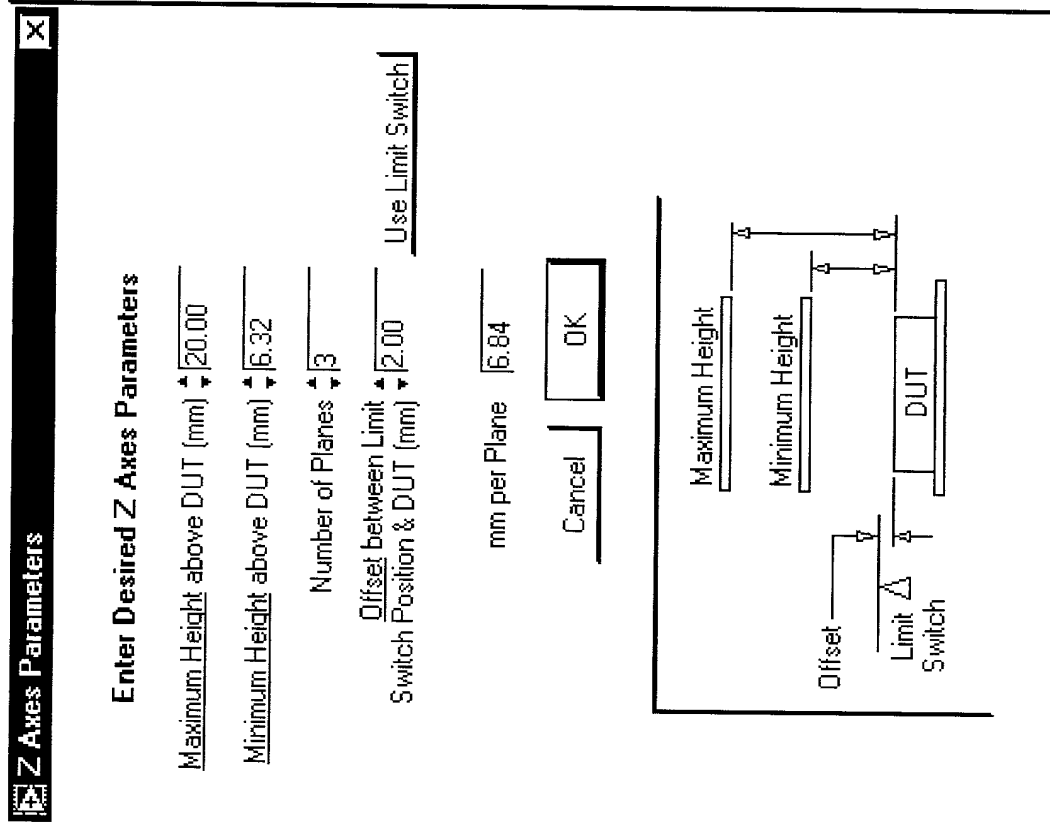
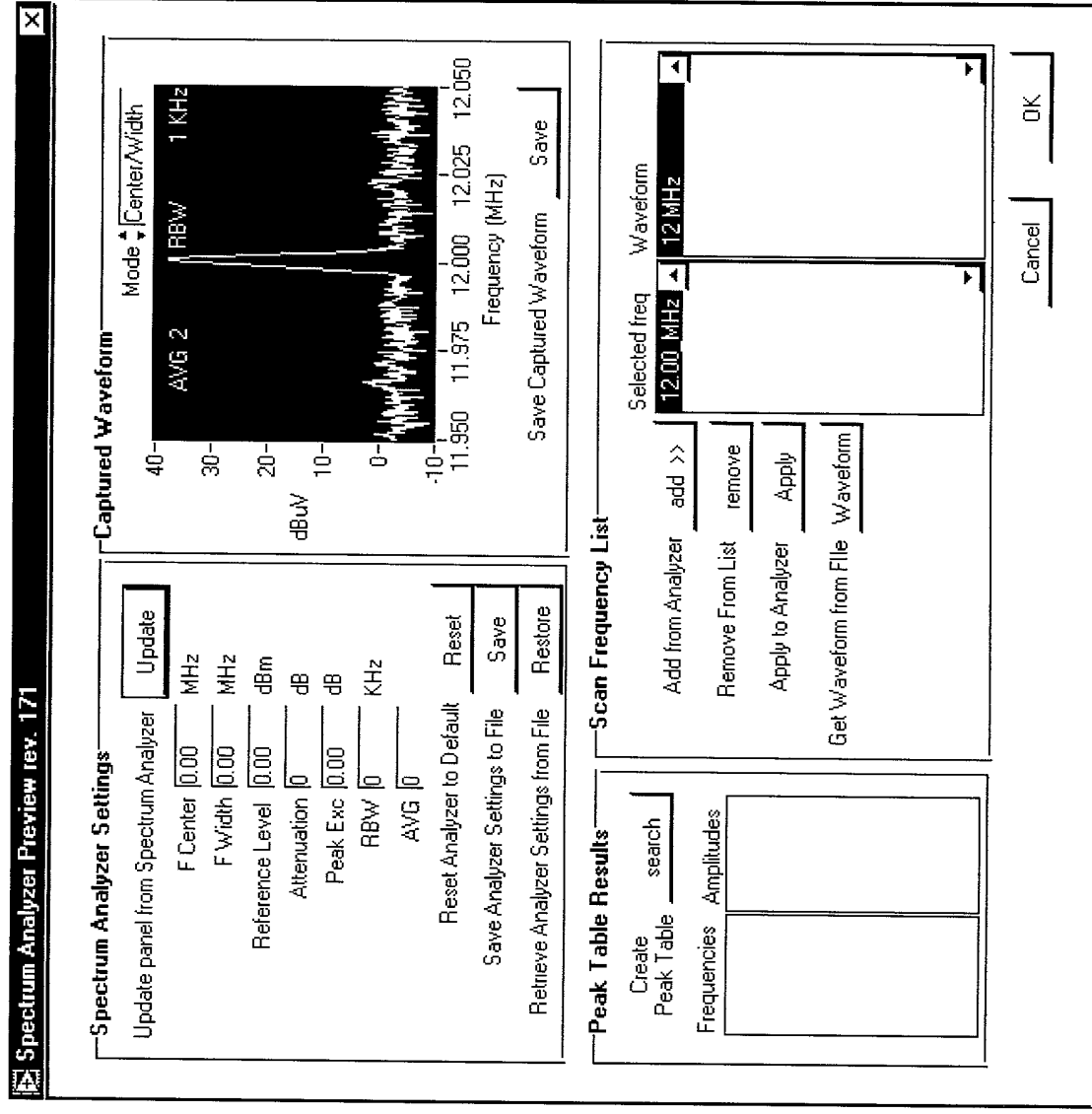


FIG. 51

FIG. 52



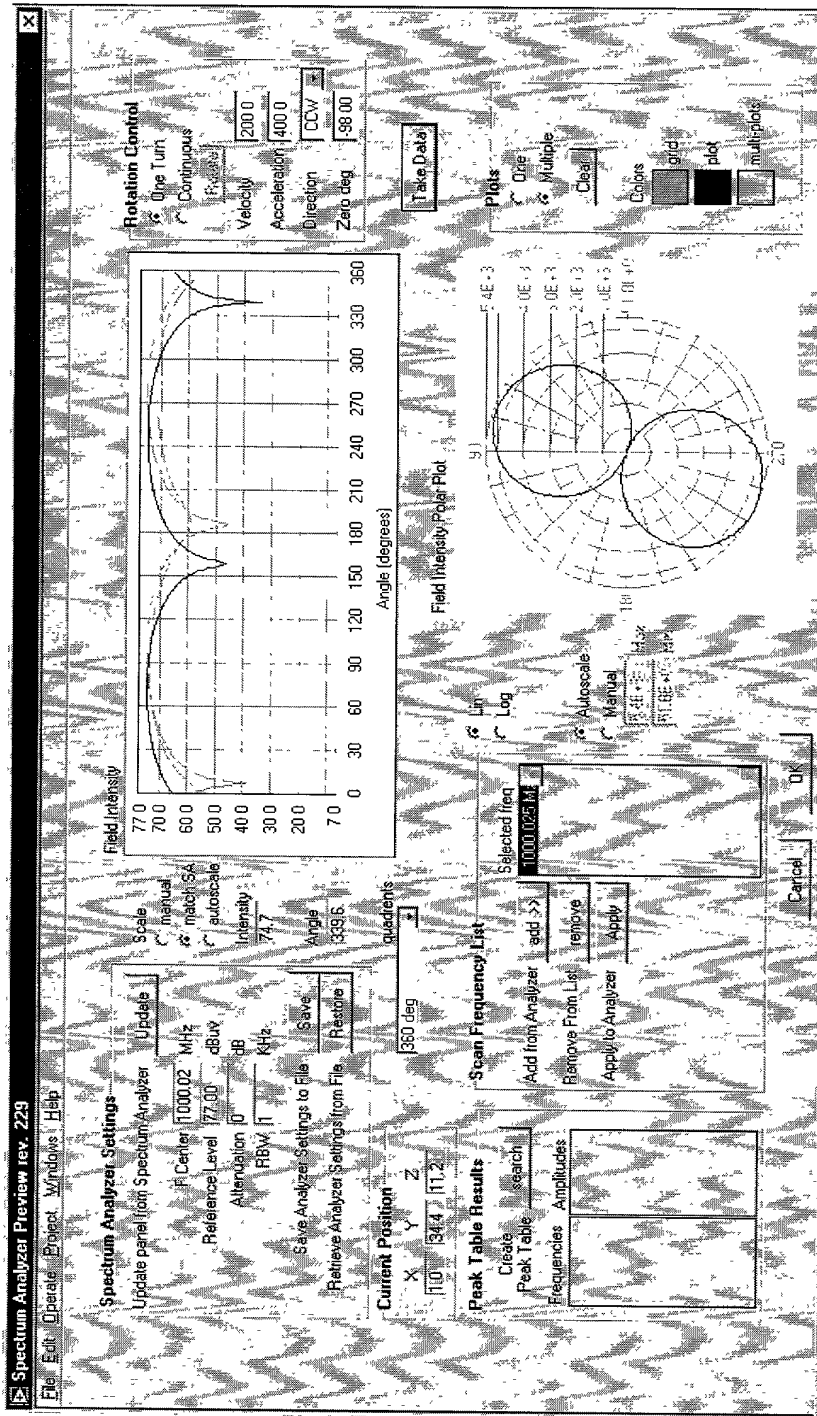


FIG. 53

FIG. 54 is a block diagram of a system for measuring the noise floor of a rotating probe. The system includes a Rotating Sensor, a Differential Amplifier, a Rotary Joint, a Bias-T (Applies DC to Differential Amplifier), a Low Noise Amplifier, a Spectrum Analyzer (Receiver), an Analog to Digital Converter, a Rotating Probe Motor Indexer, a Rotating Probe Home Opto Sensor, and a Computer. The Rotating Sensor is connected to the Differential Amplifier via a twisted pair. The Differential Amplifier is connected to the Rotary Joint via a coaxial cable. The Rotary Joint is connected to the Bias-T via a coaxial cable. The Bias-T is connected to the Low Noise Amplifier via a coaxial cable. The Low Noise Amplifier is connected to the Spectrum Analyzer (Receiver) via a coaxial cable. The Spectrum Analyzer (Receiver) is connected to the Analog to Digital Converter via an analog signal. The Analog to Digital Converter is connected to the Computer via a PCI Bus. The Rotating Probe Motor Indexer is connected to the Analog to Digital Converter via a clock signal. The Rotating Probe Home Opto Sensor is connected to the Analog to Digital Converter via a start signal.

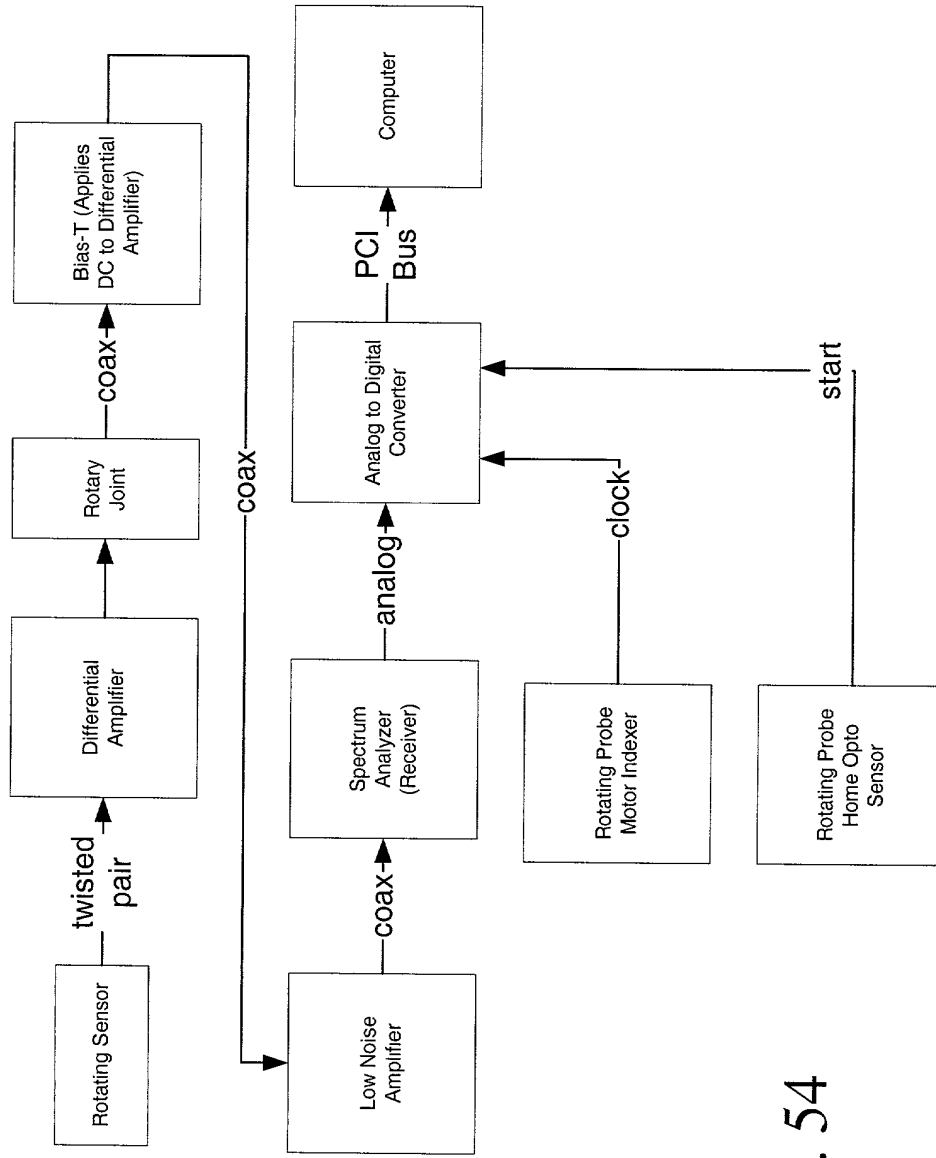


FIG. 54

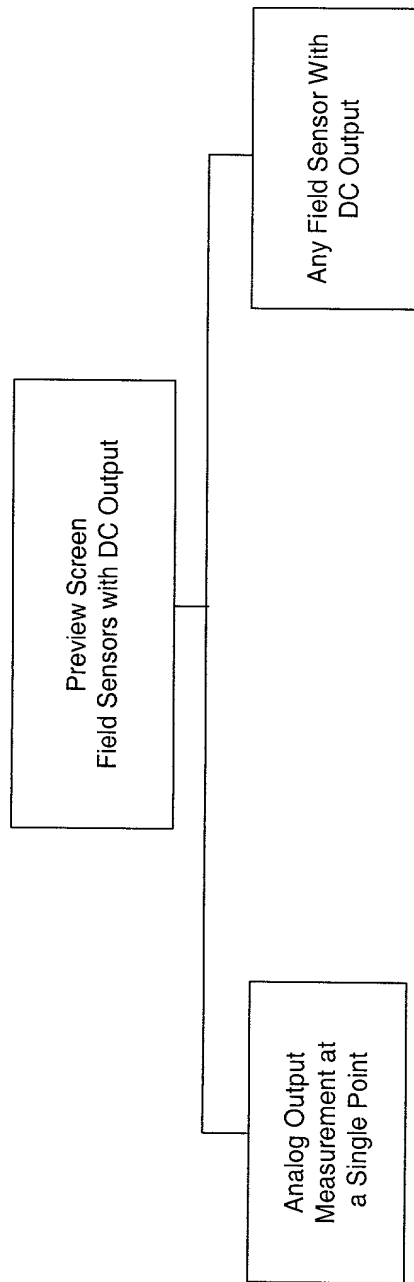


FIG. 55

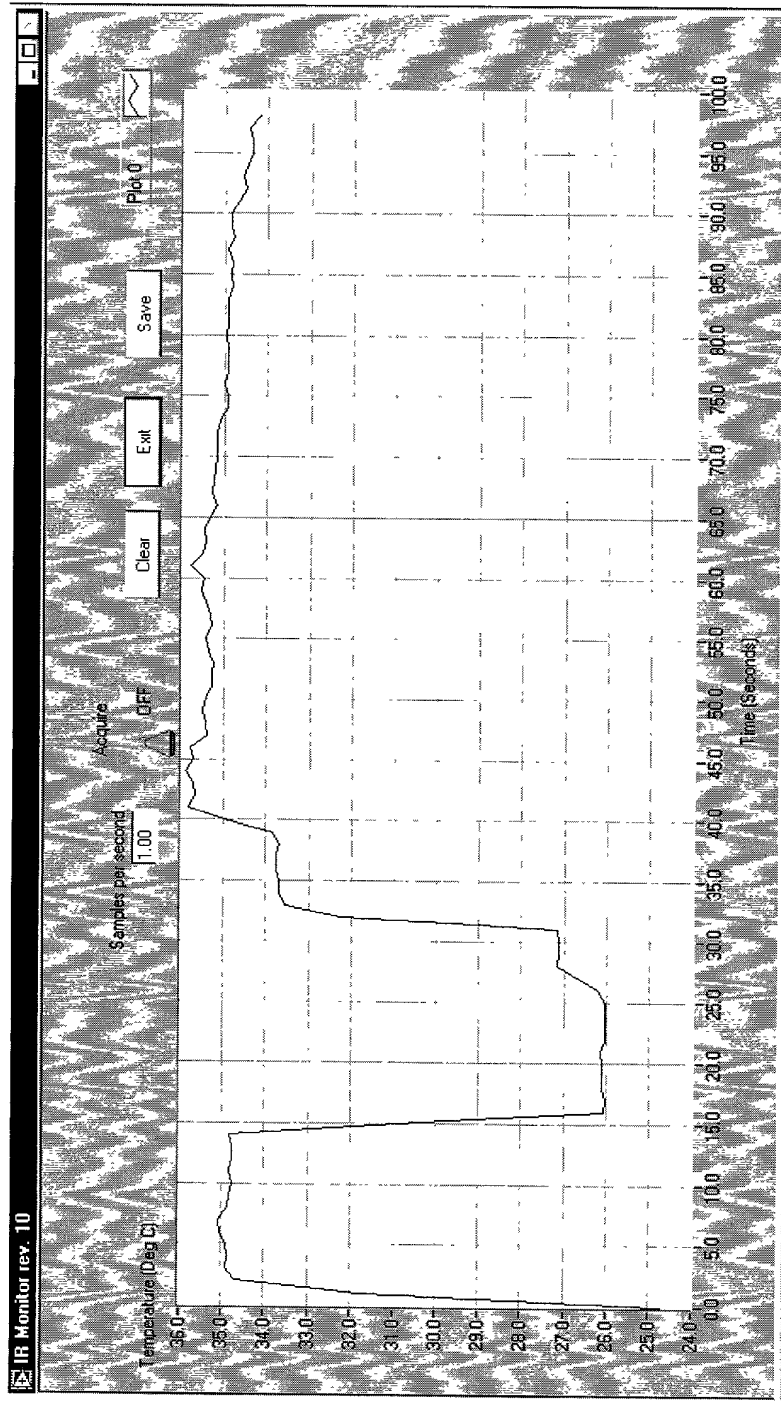


FIG. 56

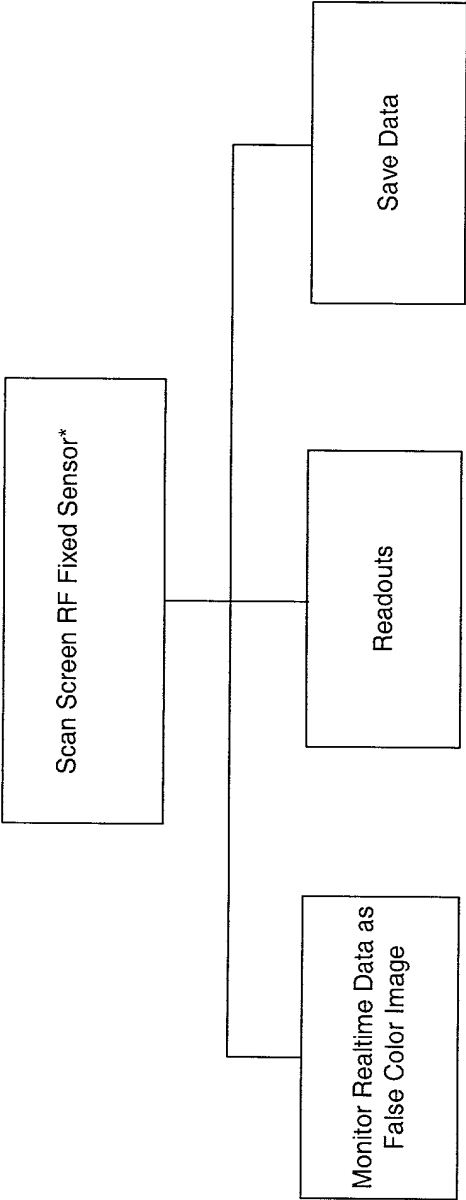


FIG. 58

When you scan, the data is saved to the file specified in the file name field. The file name can be up to 255 characters long.

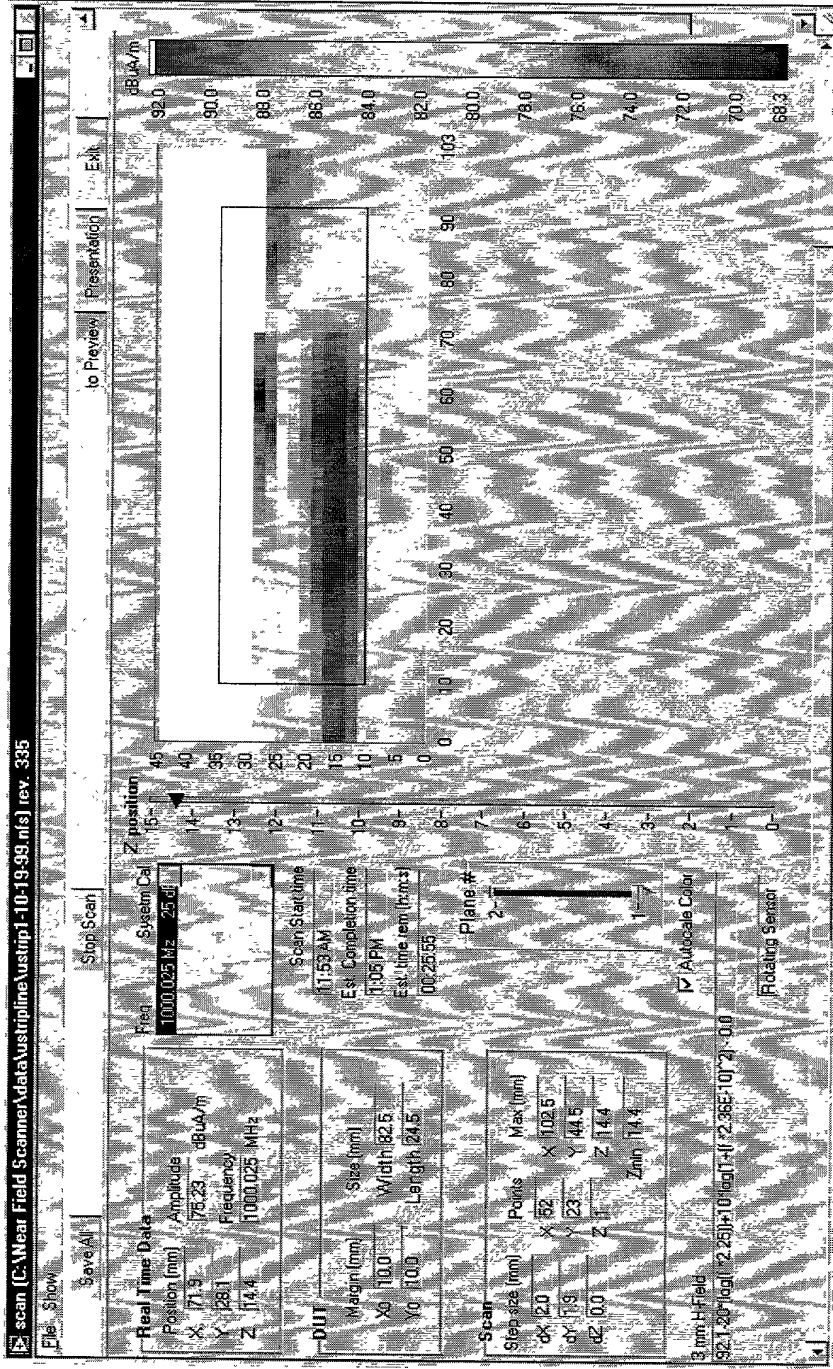
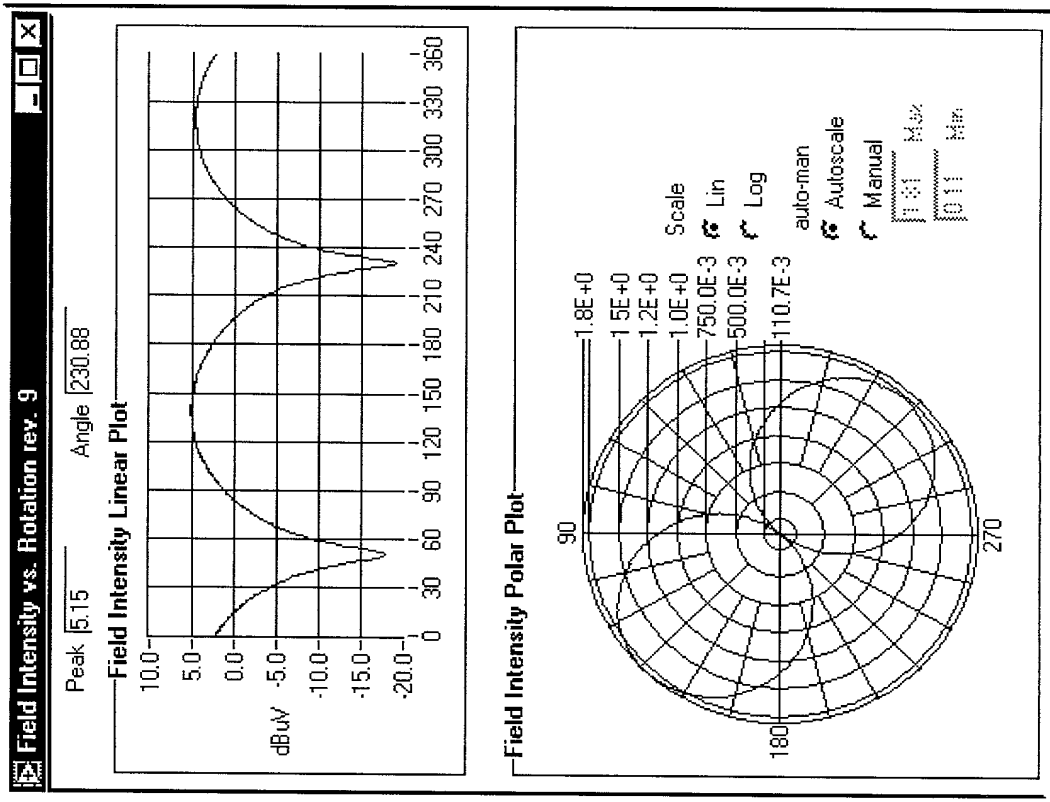


FIG. 59

FIG. 60



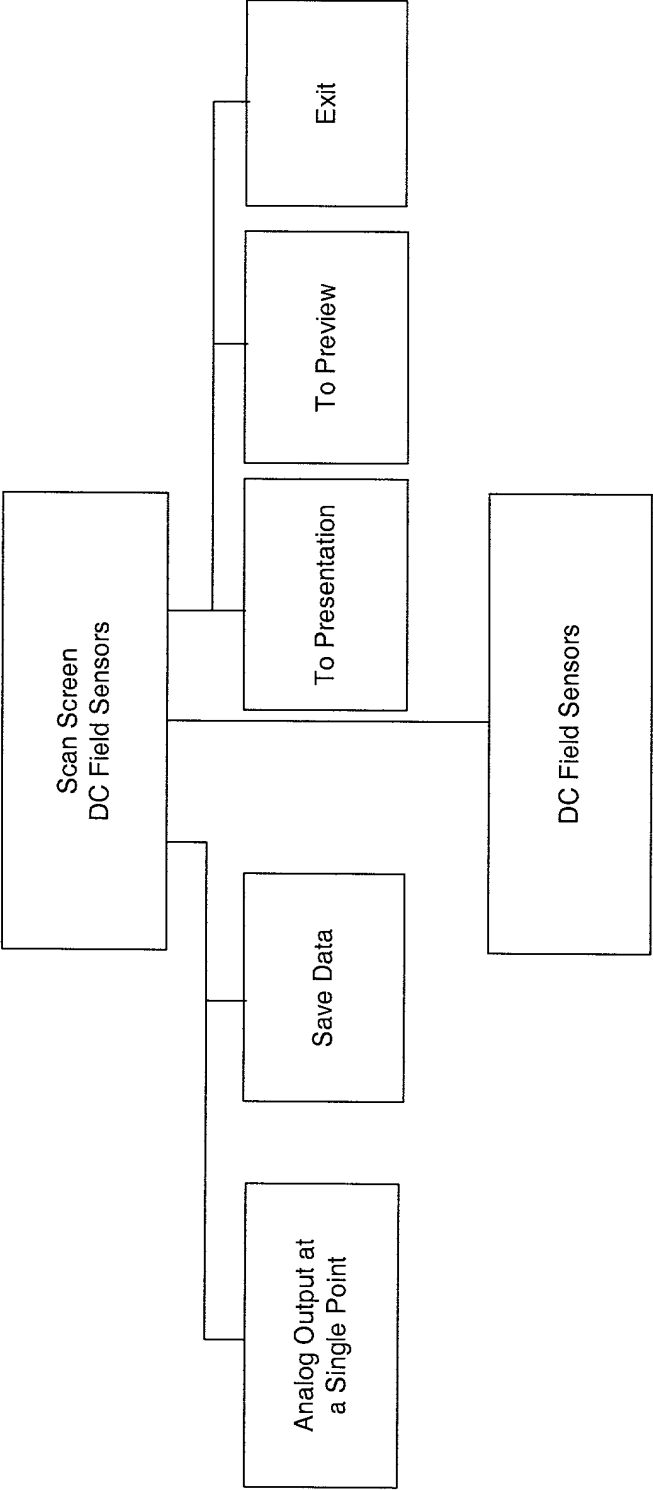


FIG. 61

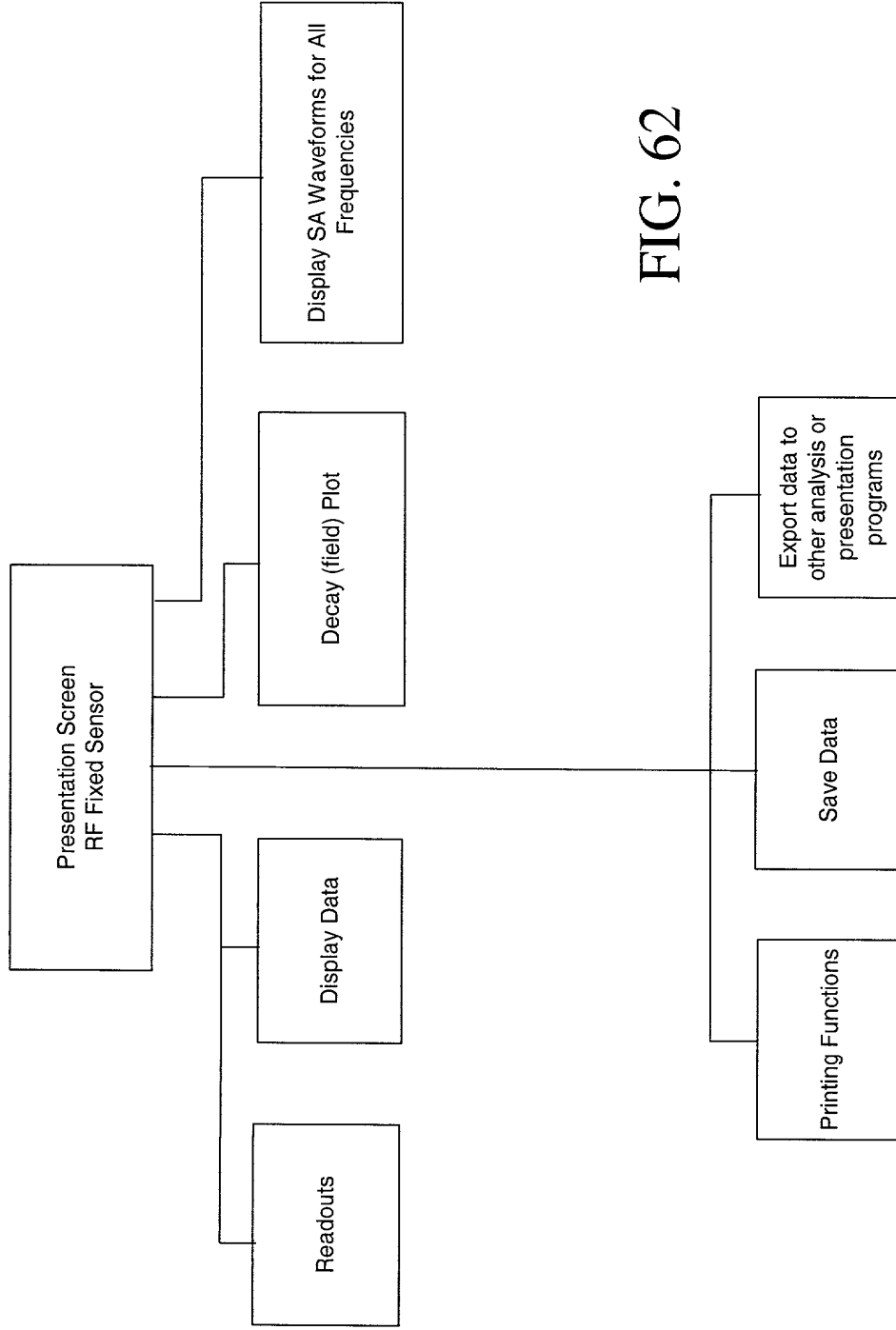


FIG. 62

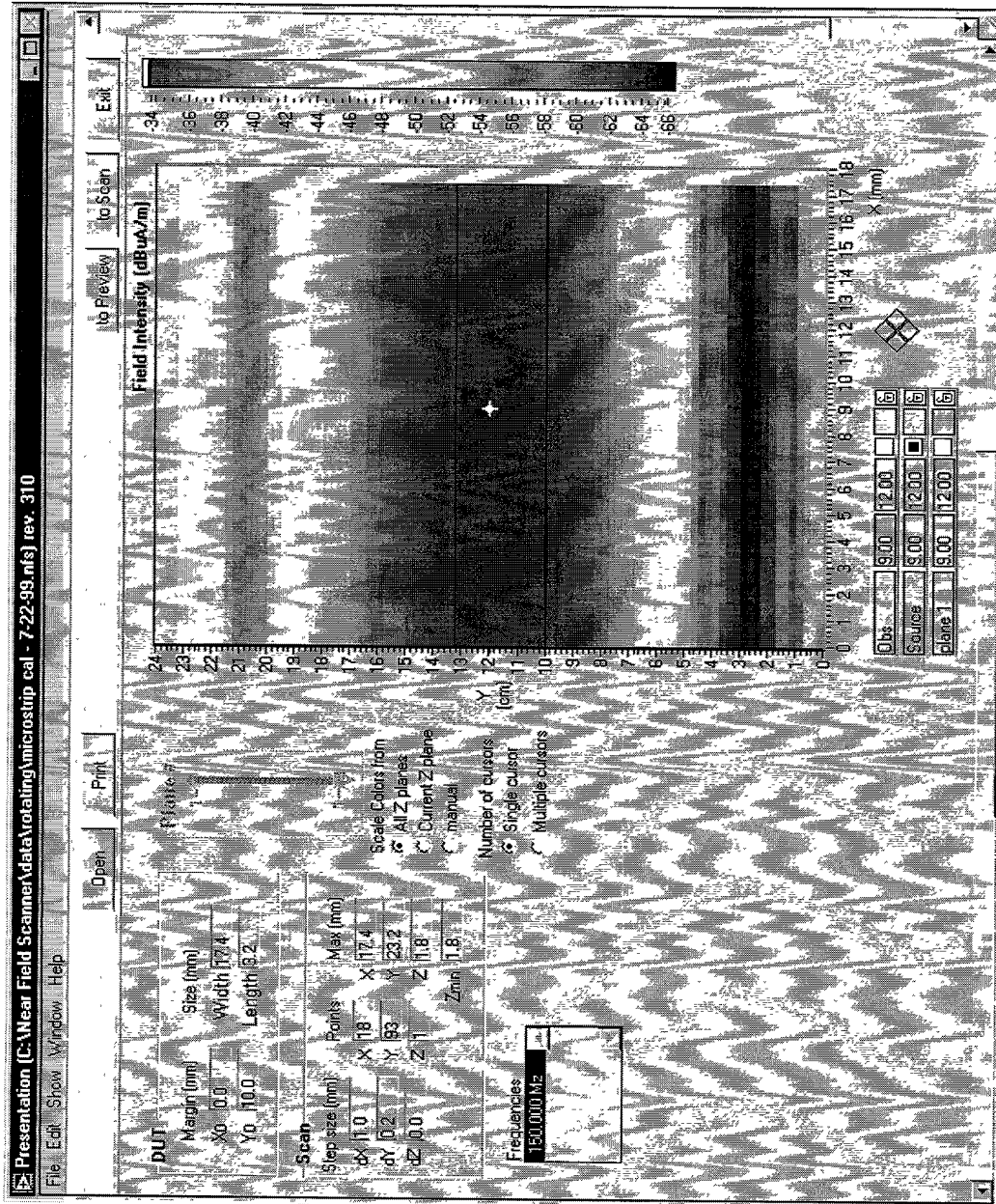
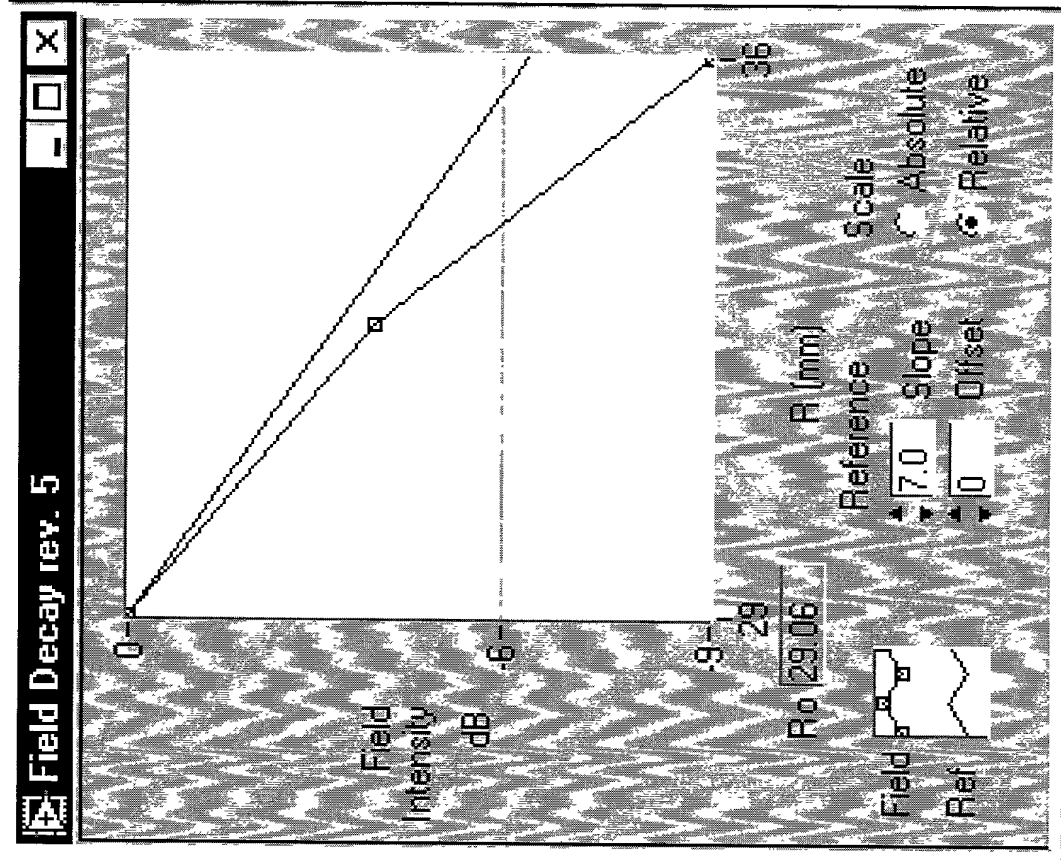


FIG. 63

FIG. 64



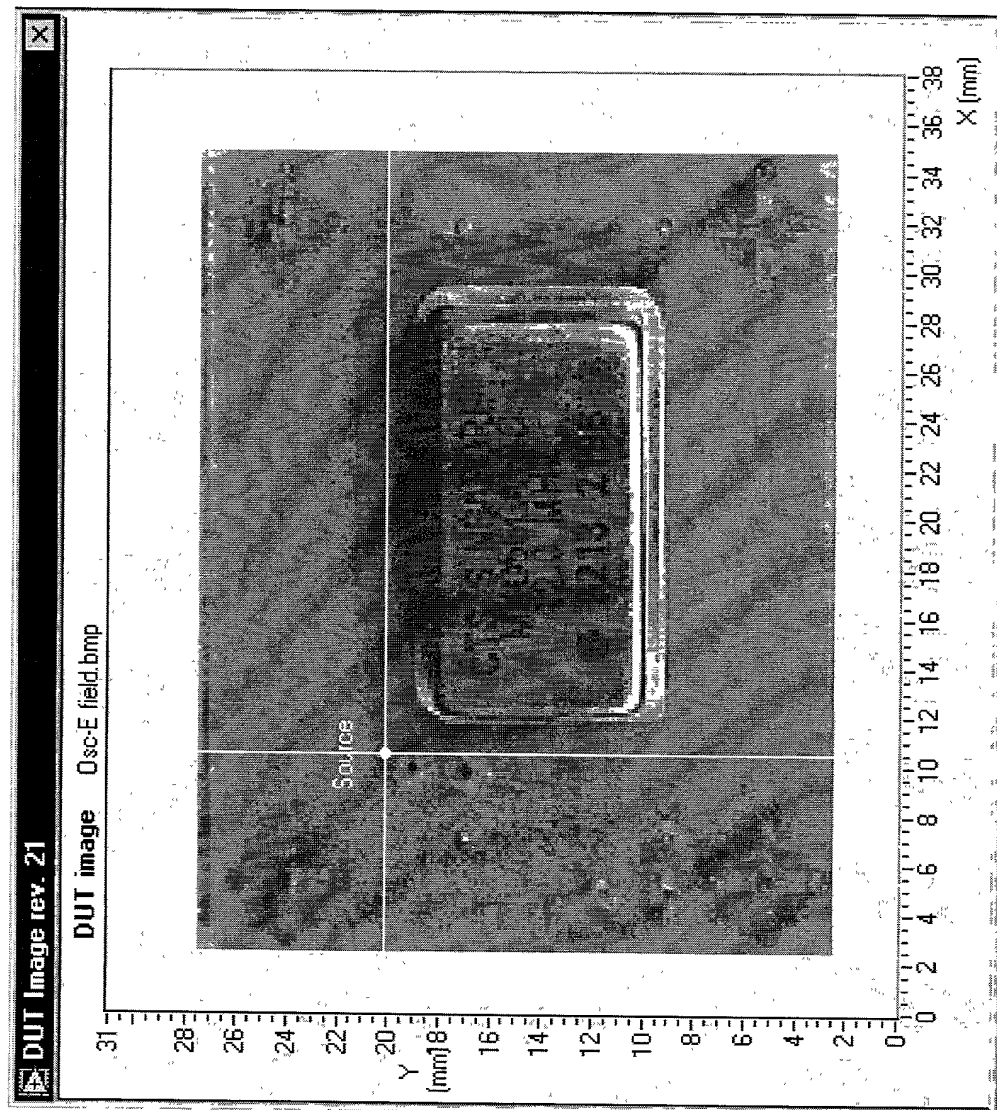


FIG. 65

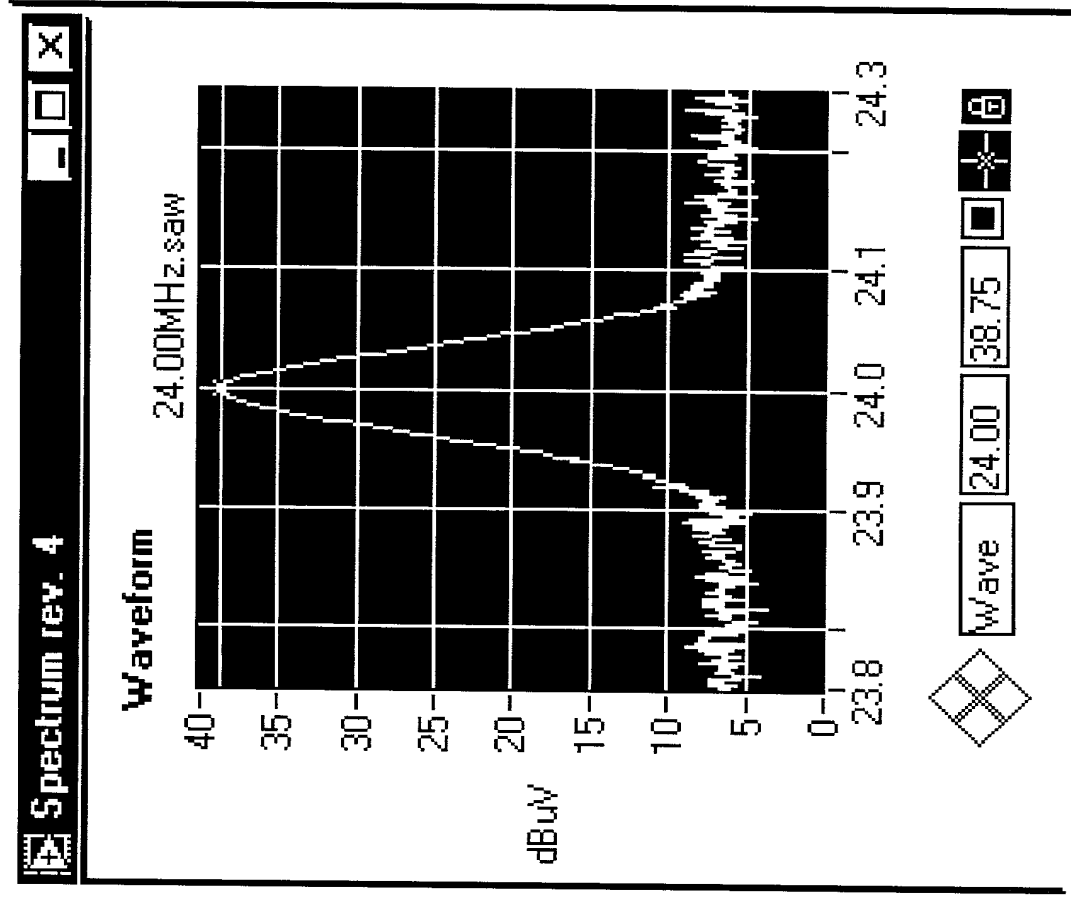


FIG. 66

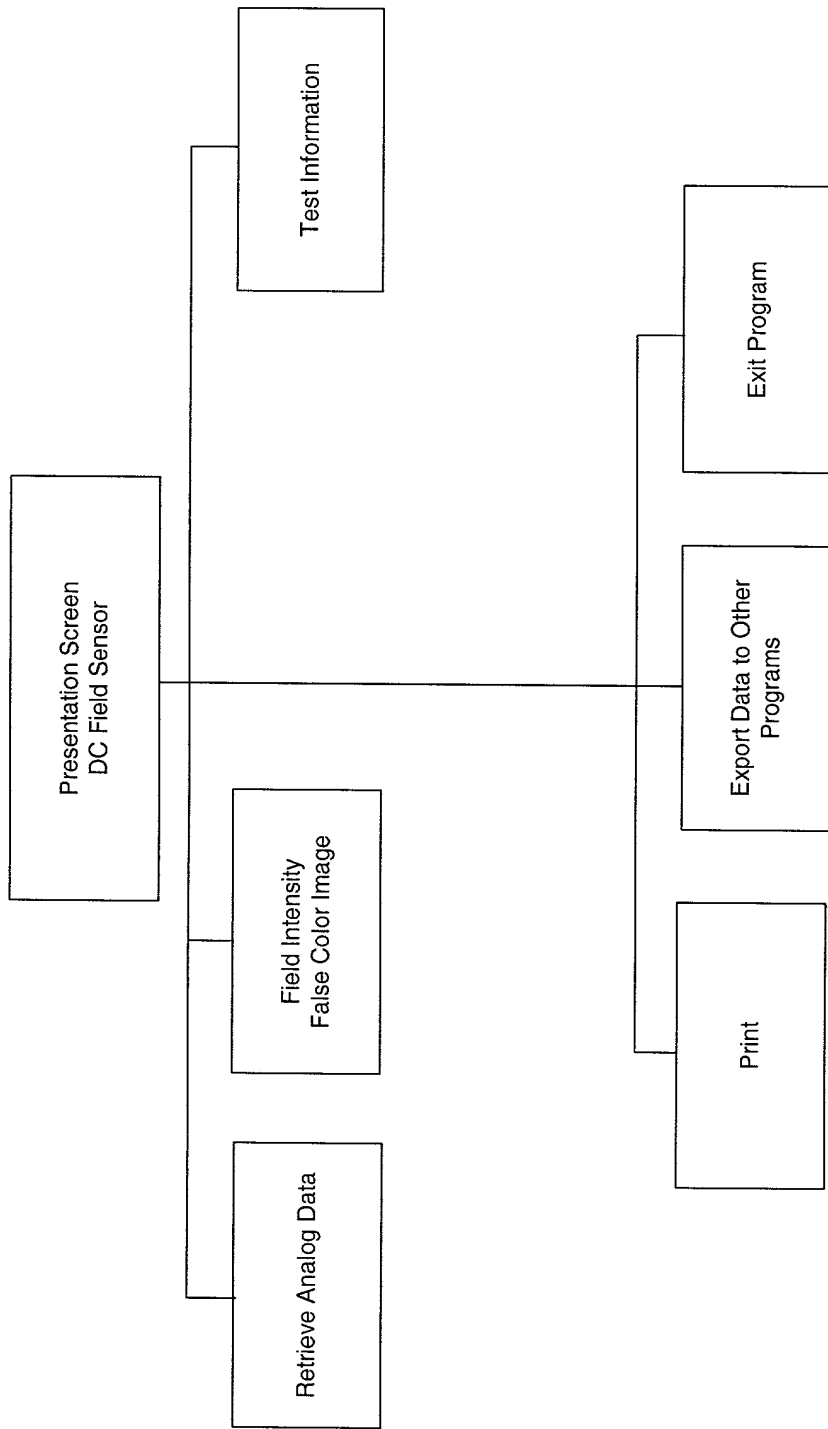


FIG. 67

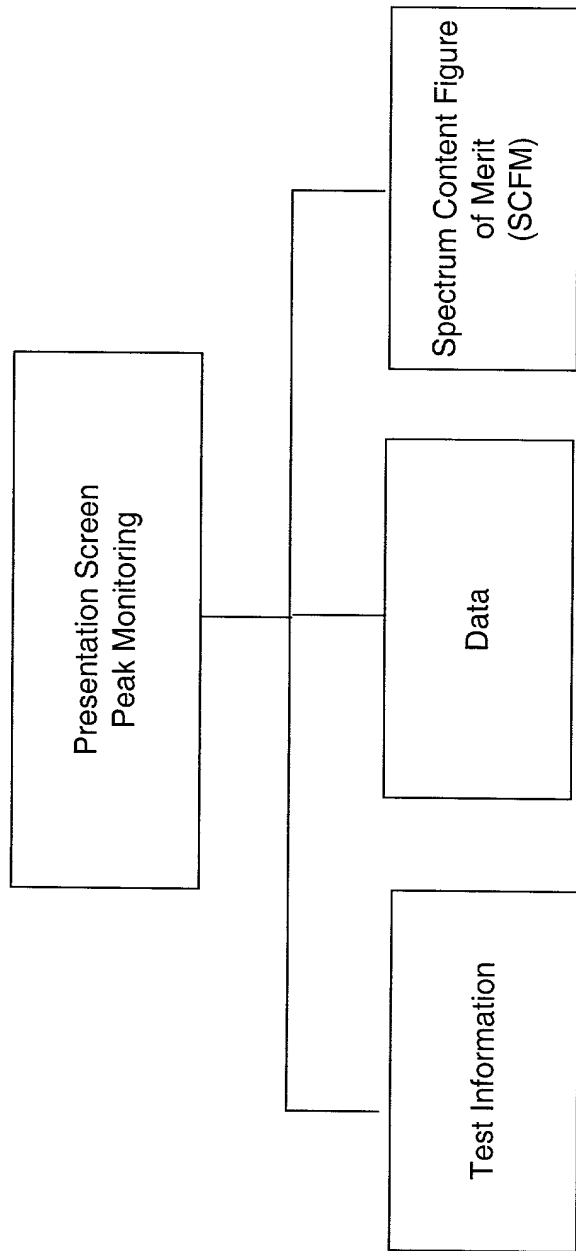


FIG. 68

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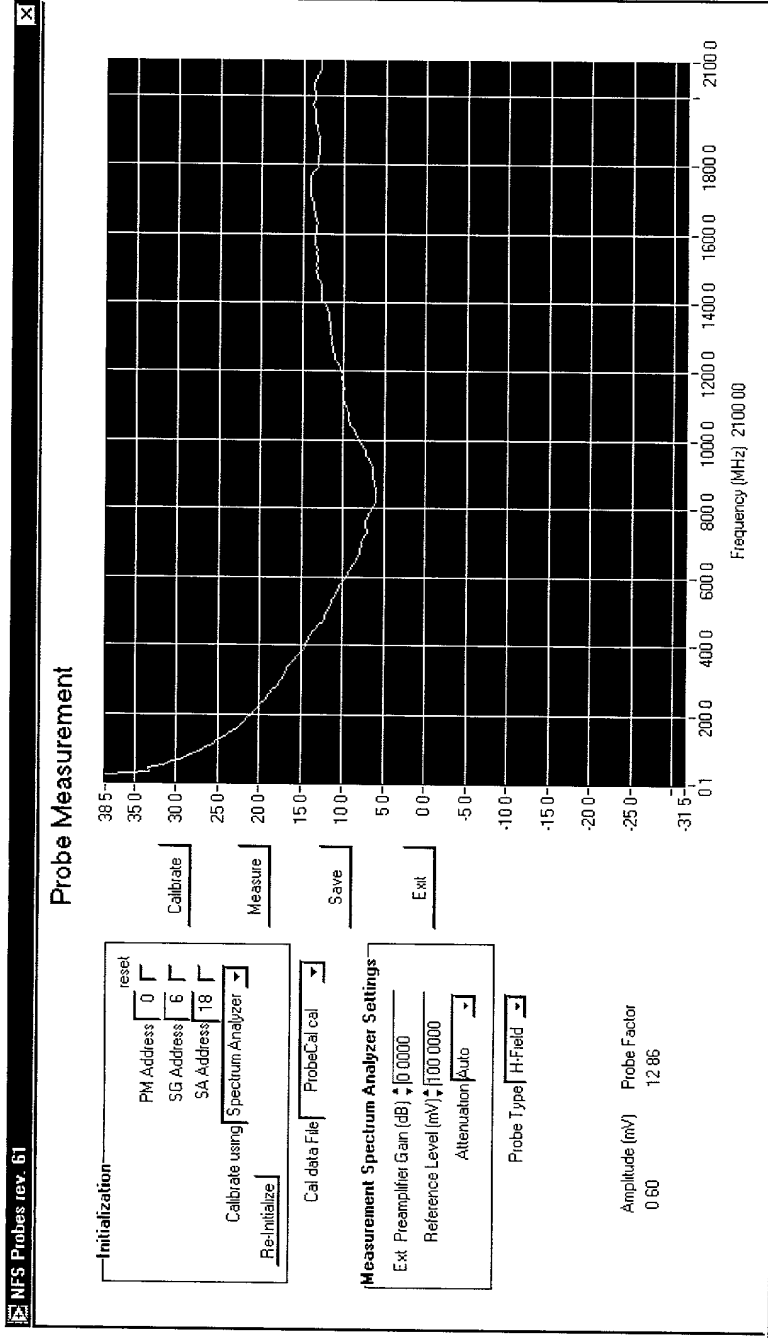


FIG. 69

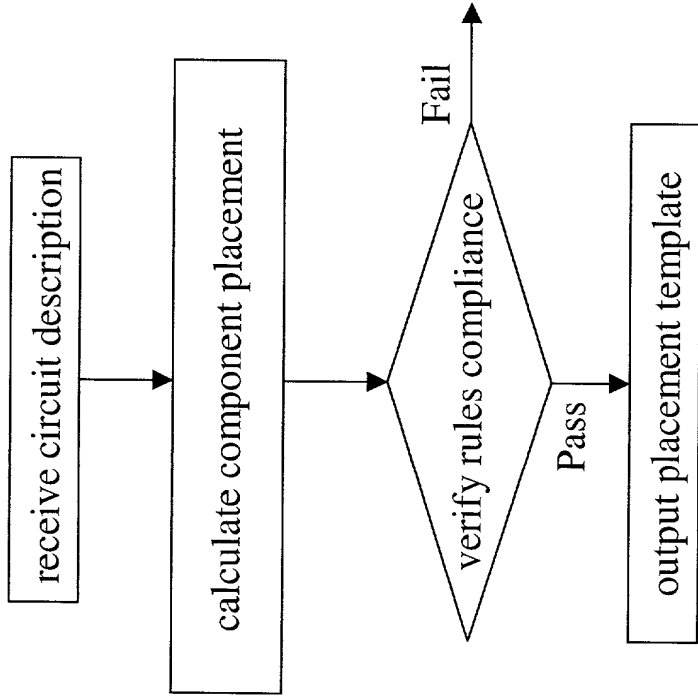


FIG. 70 (RELATED ART)

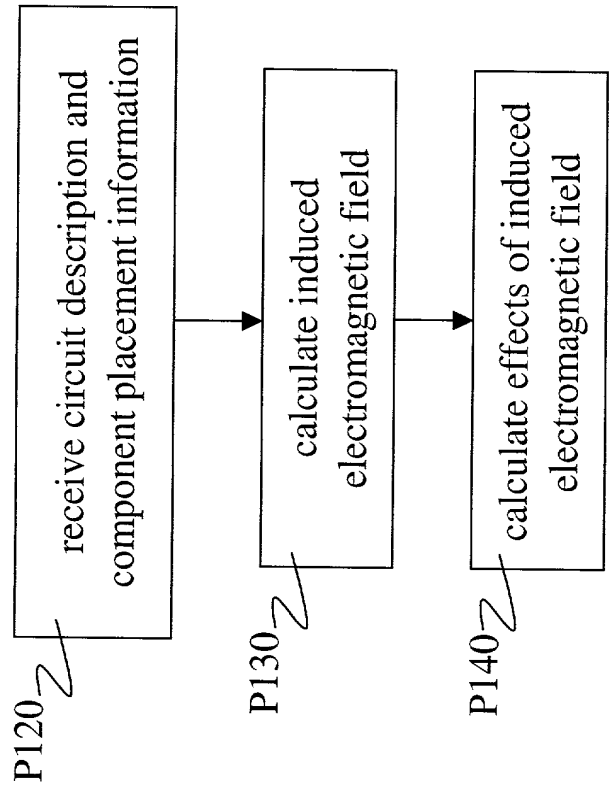


FIG. 71

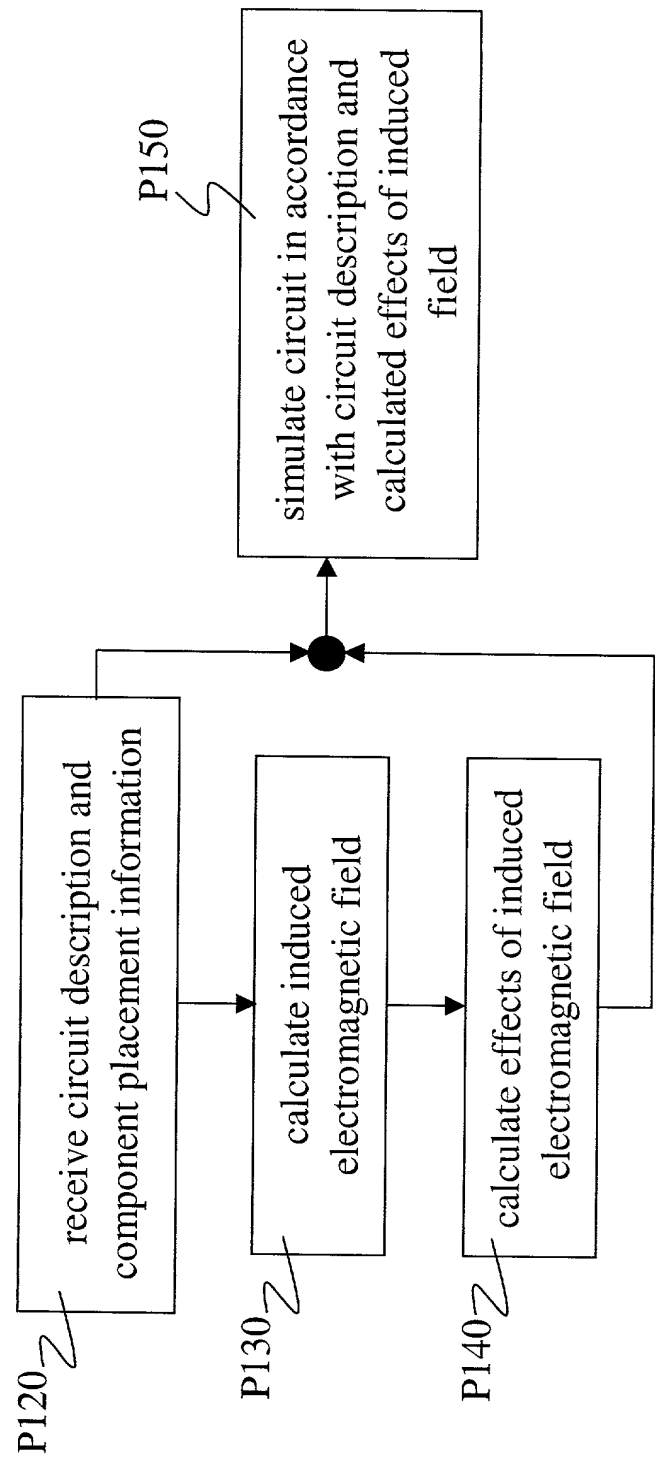


FIG. 72

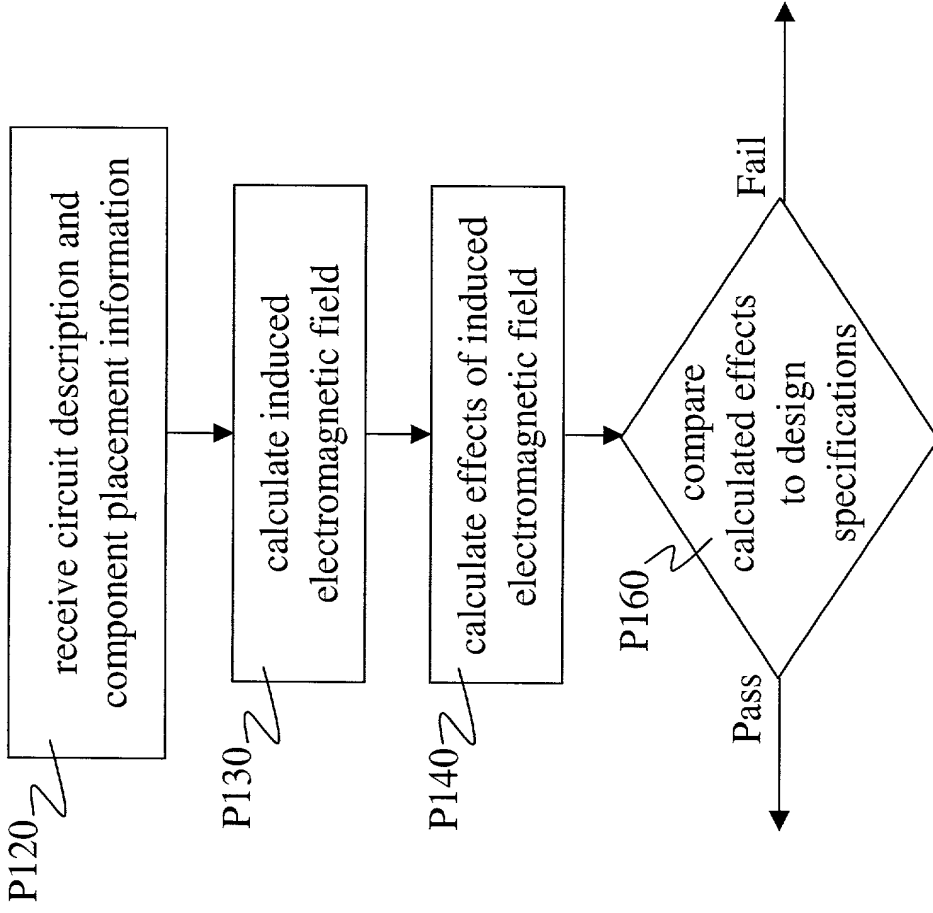


FIG. 73

FIG. 74 is a flowchart illustrating a process for calculating induced electromagnetic fields and comparing the results to design specifications. The process begins with receiving circuit description and component placement information (P120). This information is then used to calculate the induced electromagnetic field (P130) and the effects of the induced electromagnetic field (P140). The results are compared to design specifications (P160). If the results fail to meet the specifications, the circuit description and/or component placement information is modified (P170) and the process loops back to P130. If the results pass the comparison, the process ends.

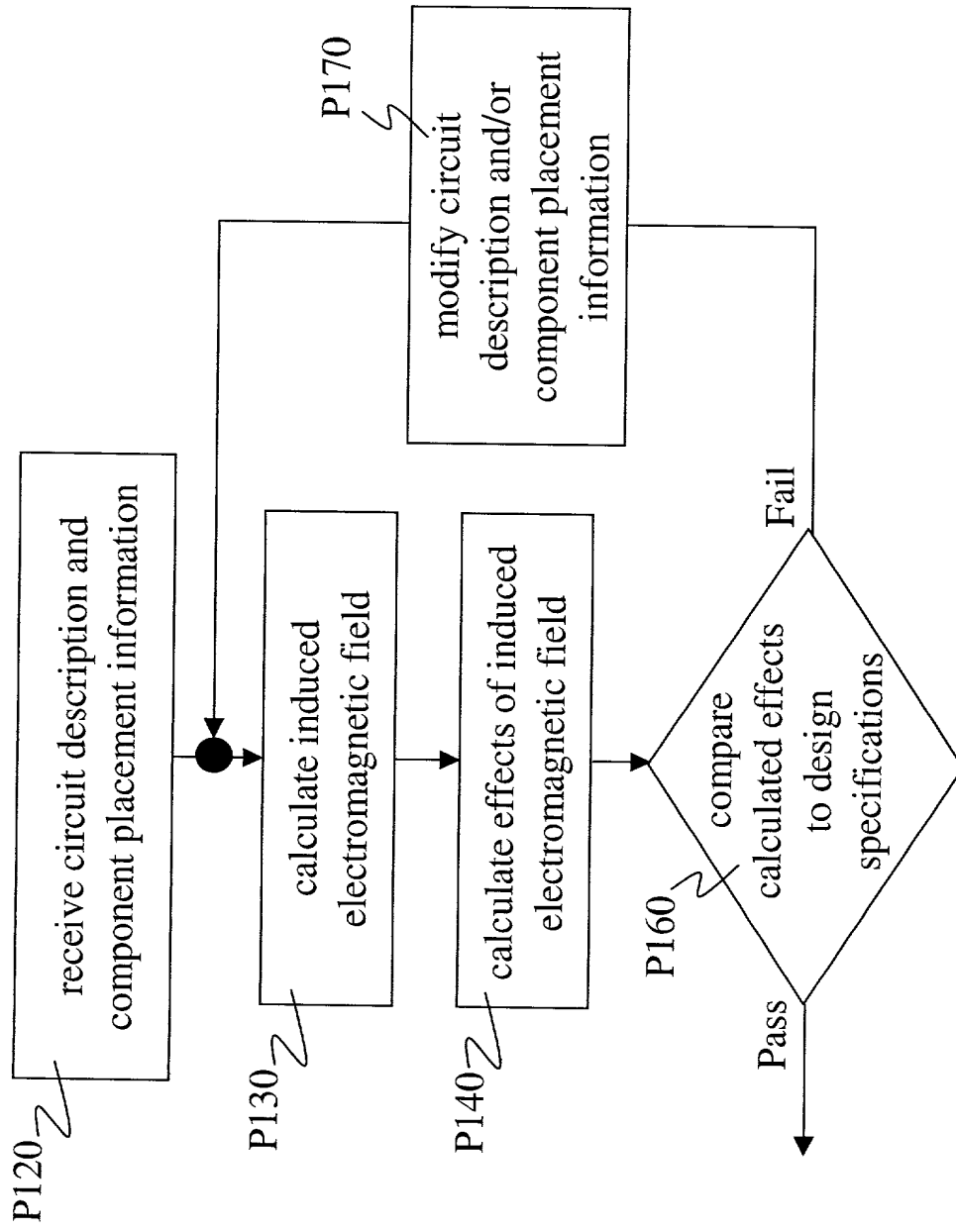


FIG. 74

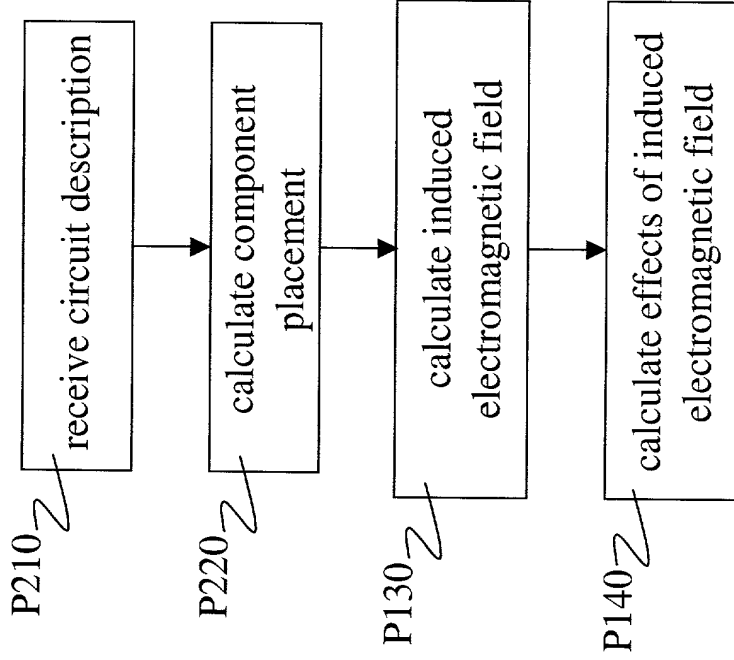


FIG. 75

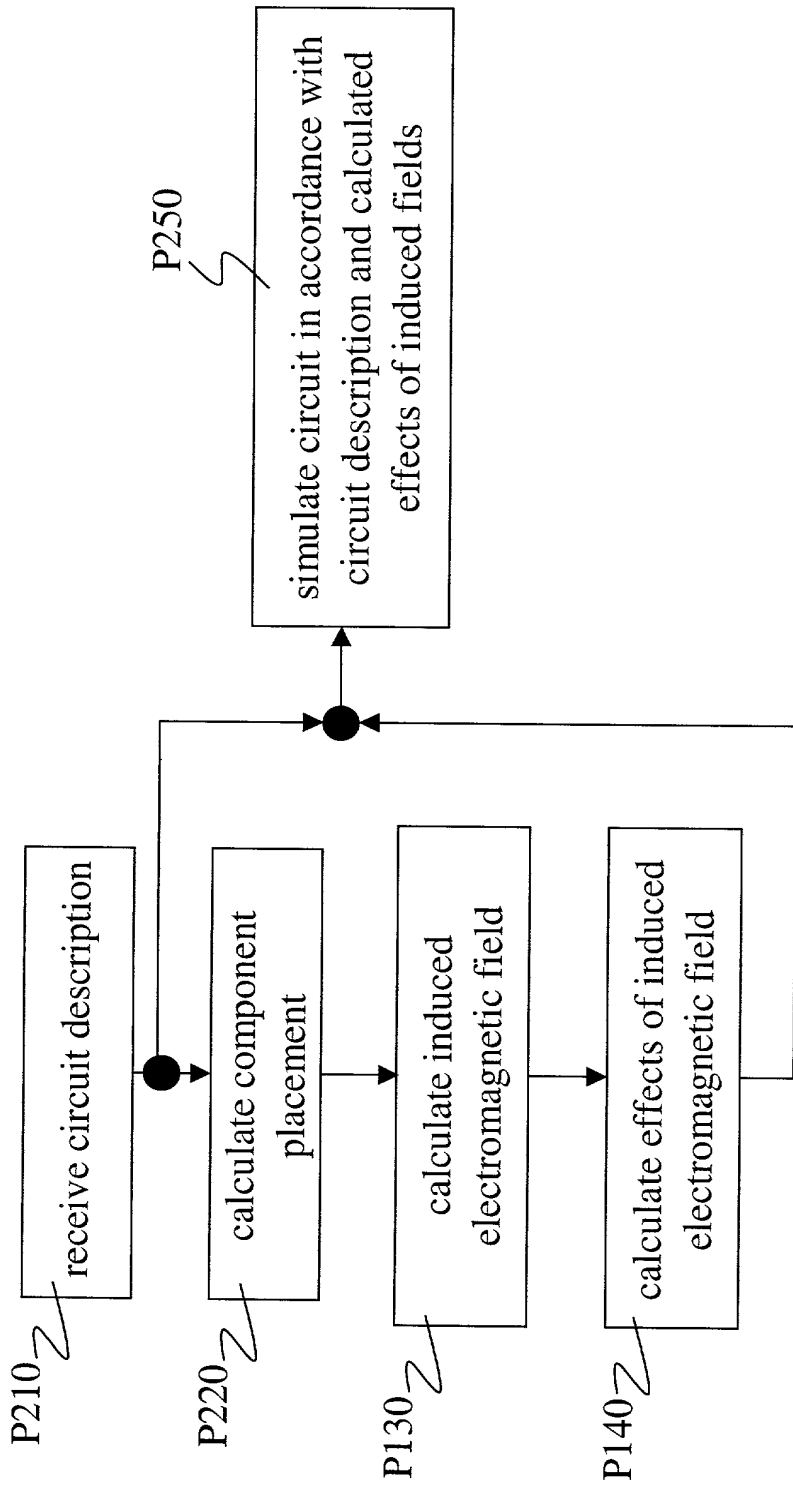


FIG. 76

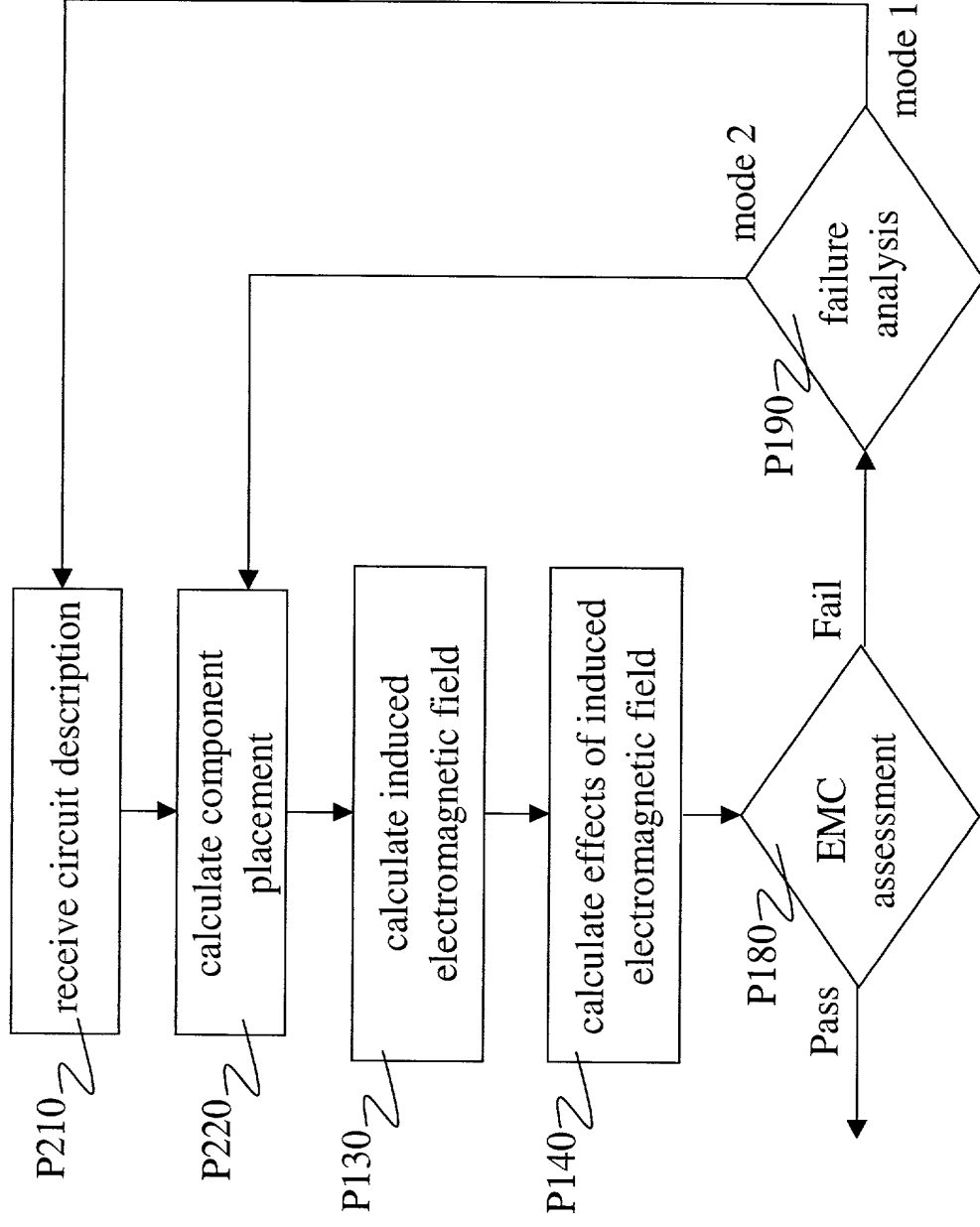


FIG. 77

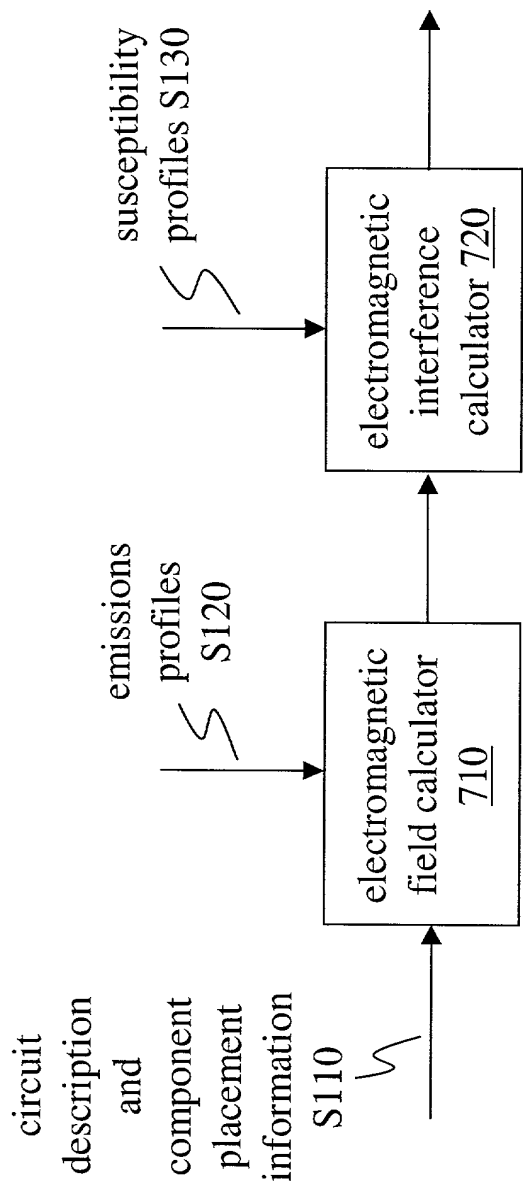


FIG. 78

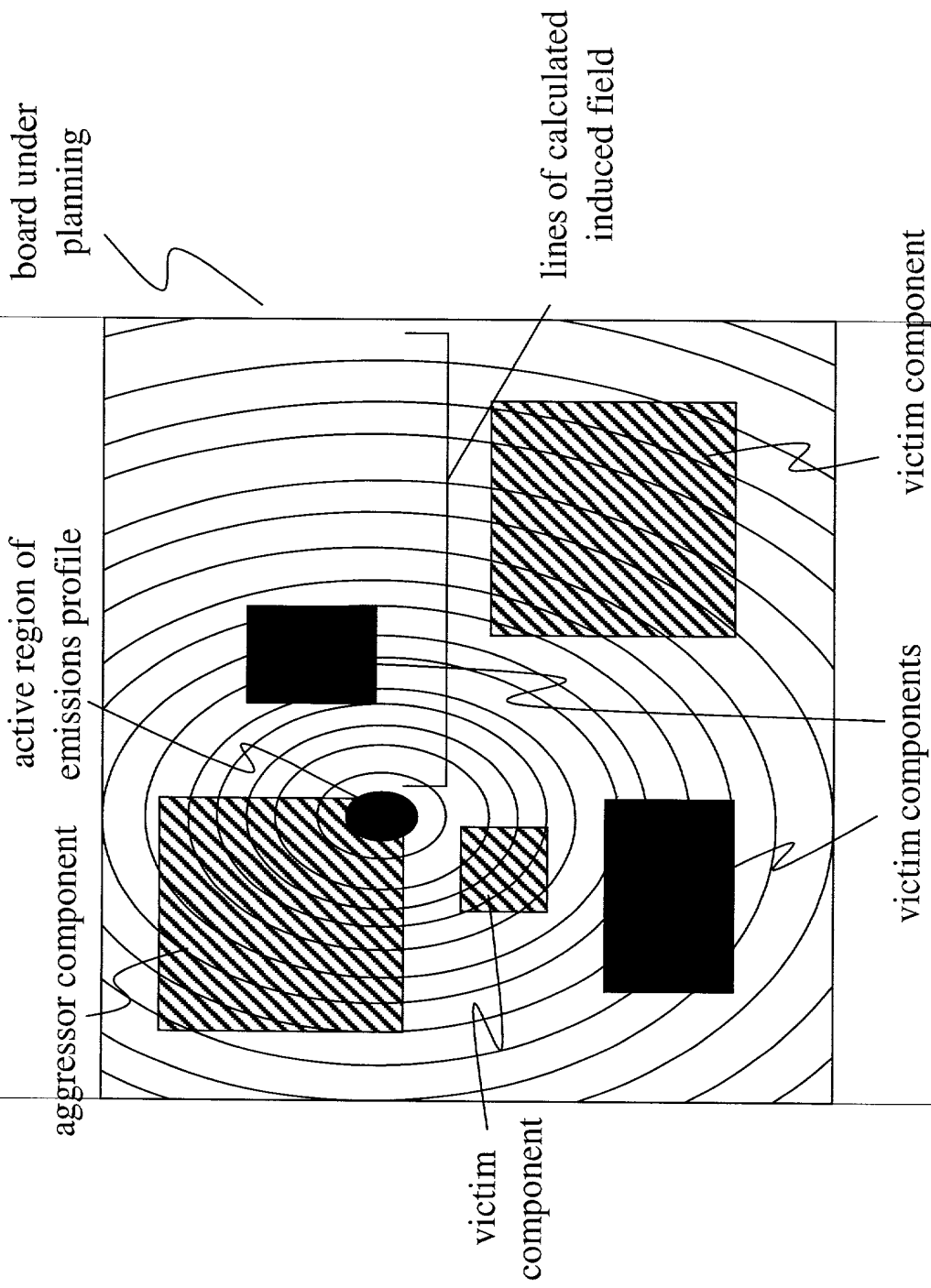


FIG. 80

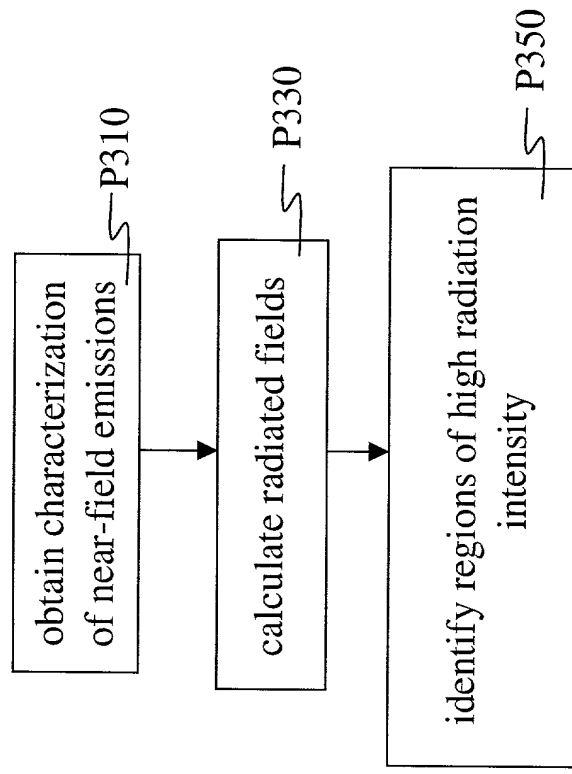


FIG. 81

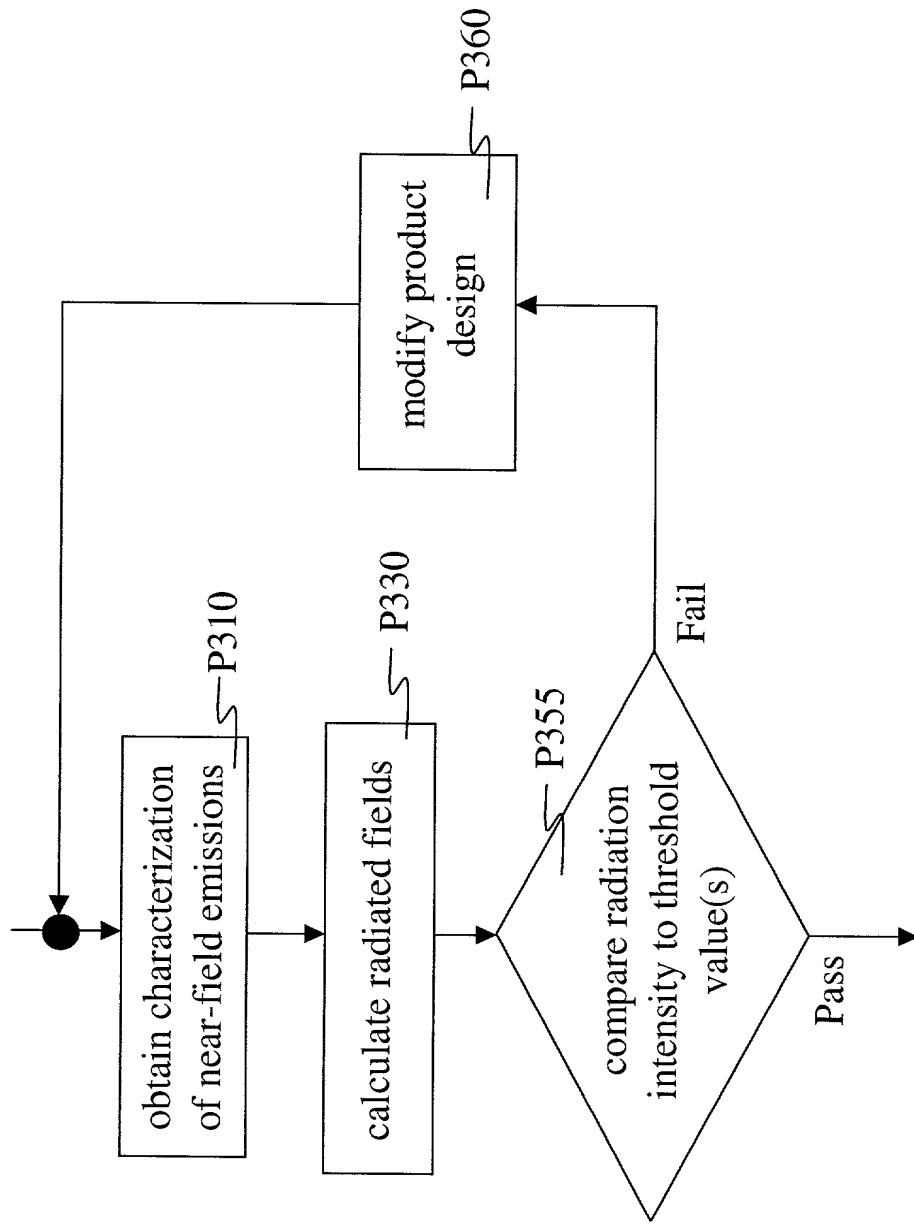


FIG. 82

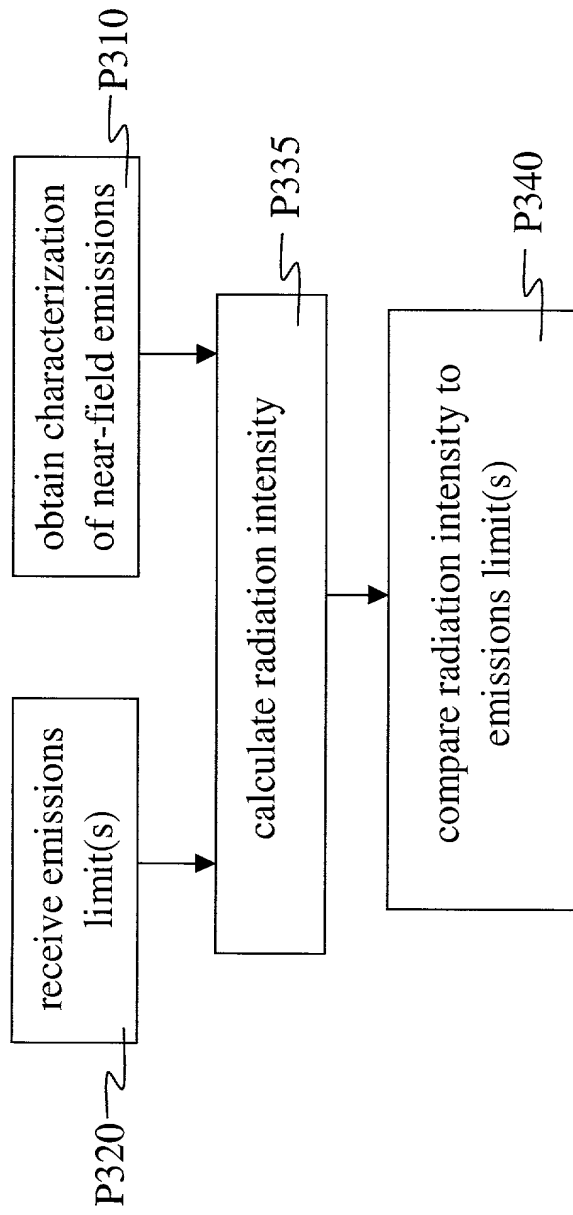


FIG. 83

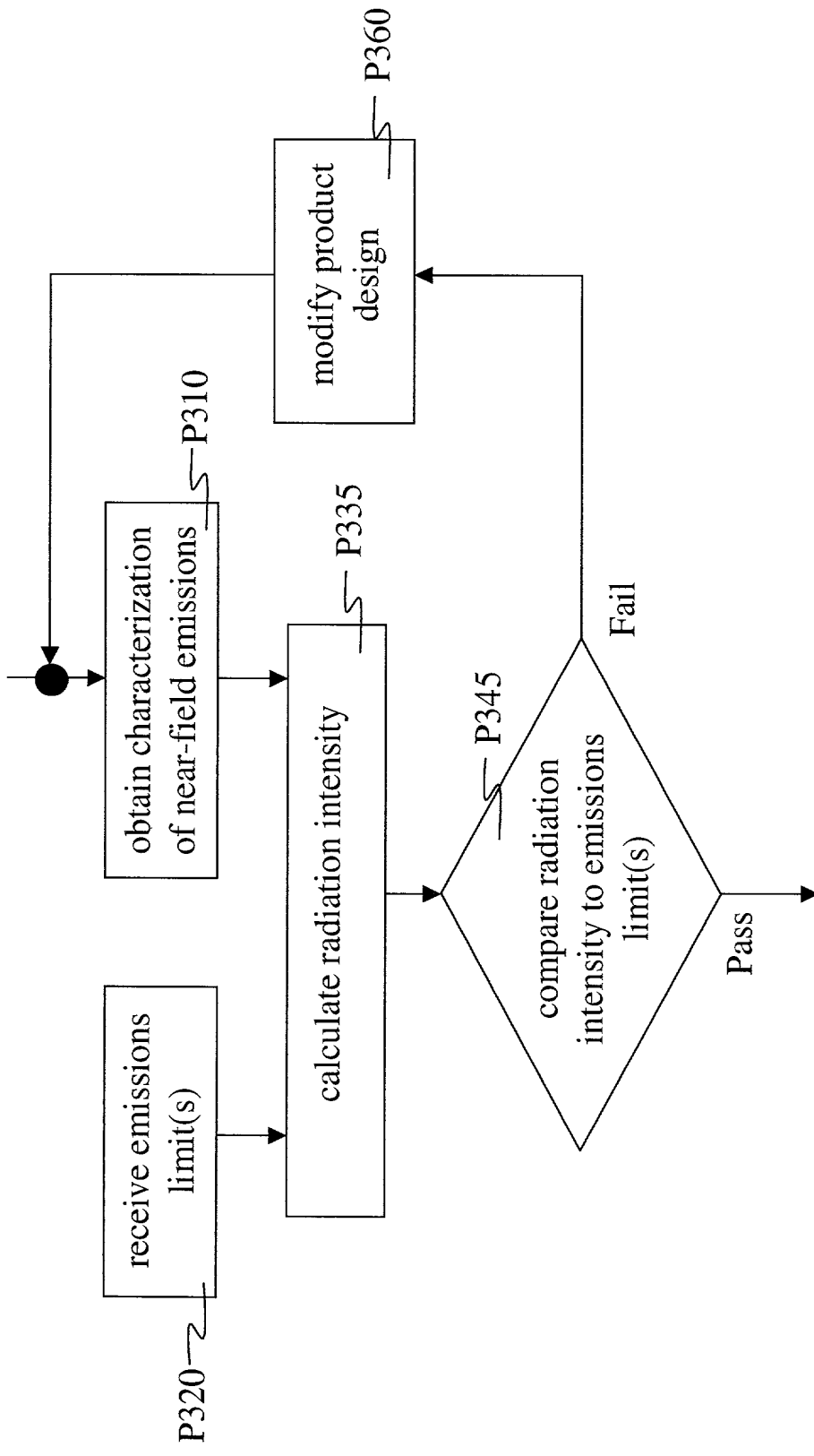


FIG. 84

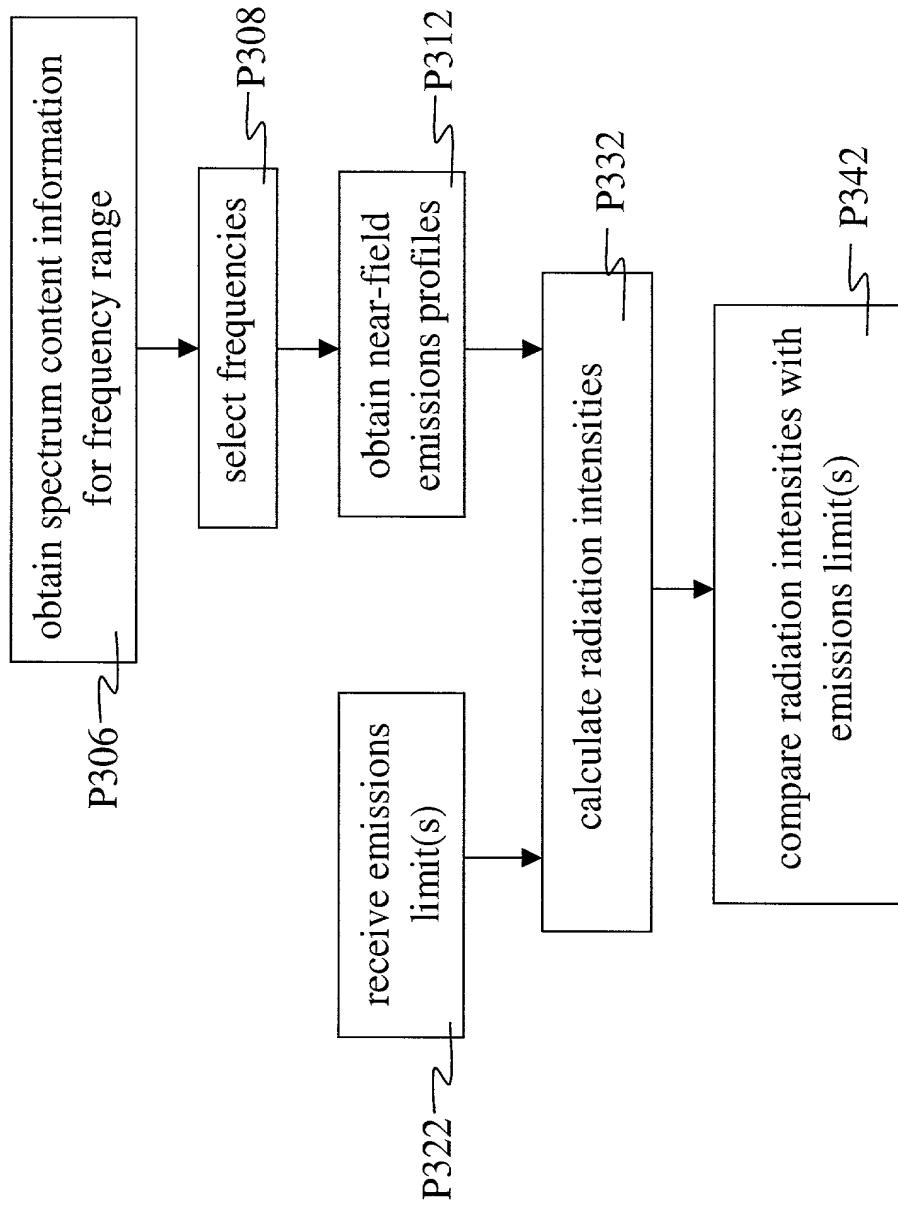
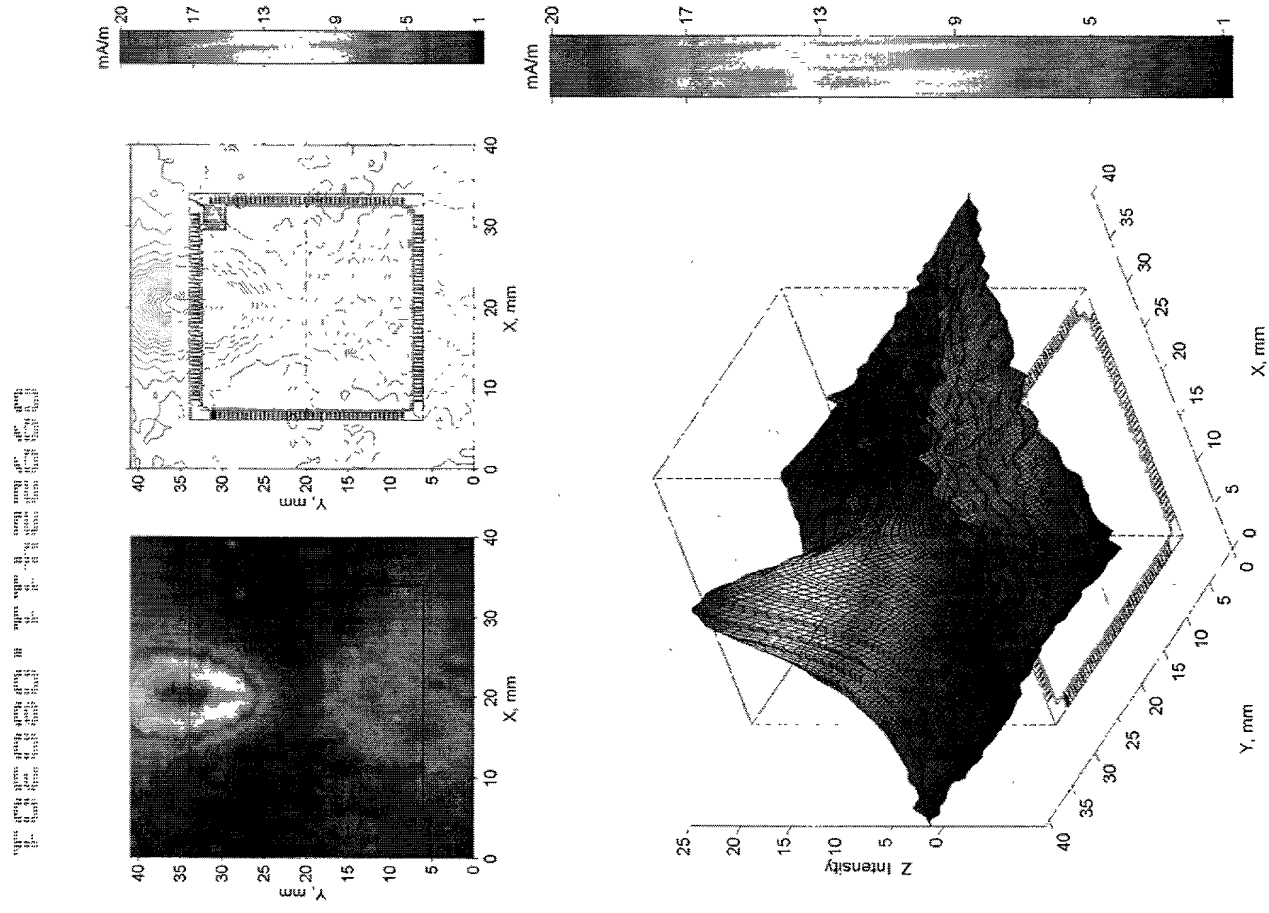


FIG. 85

FIG. 86



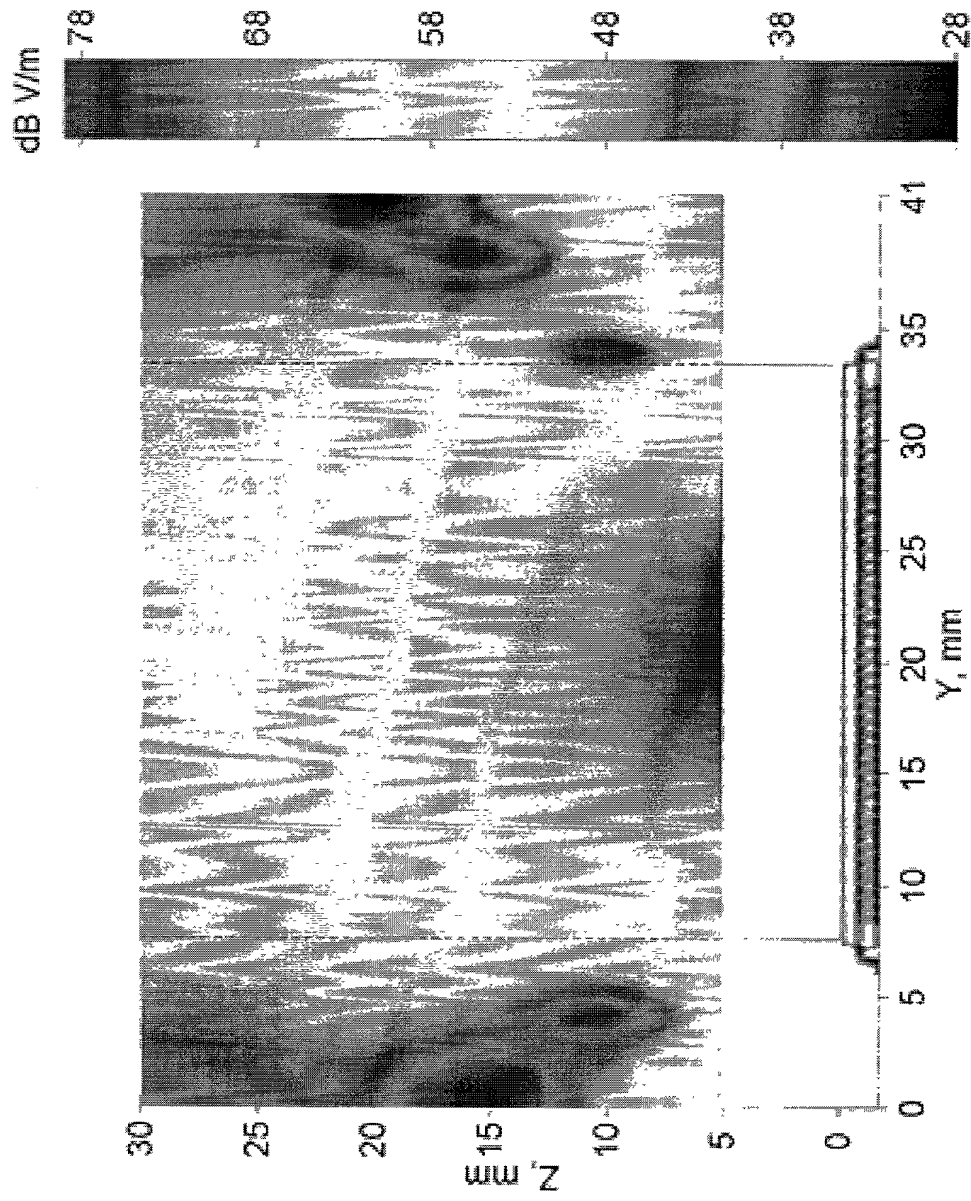


FIG. 87

Figure 88 shows two plots of the sound field in a room. The left plot shows the sound field in the X-Y plane, and the right plot shows the sound field in the X-Z plane. Both plots show the sound pressure level (SPL) in dB uV/m as a function of position (X, Y, Z) in mm. The color scale ranges from 77 to 109 dB uV/m.

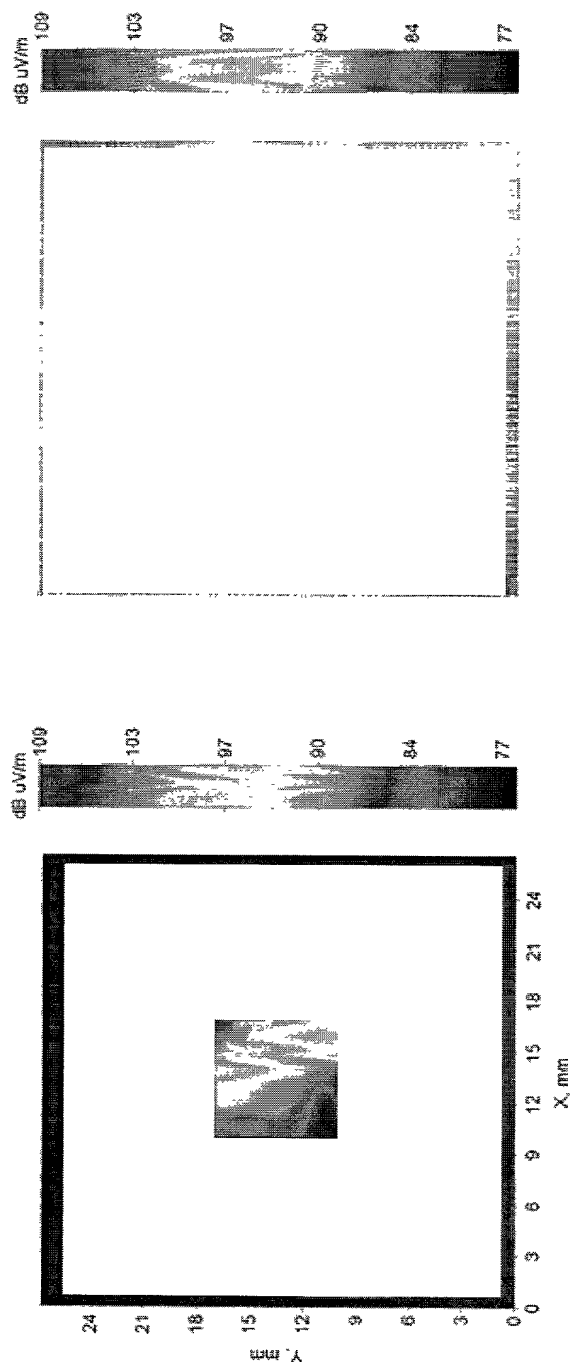


FIG. 88

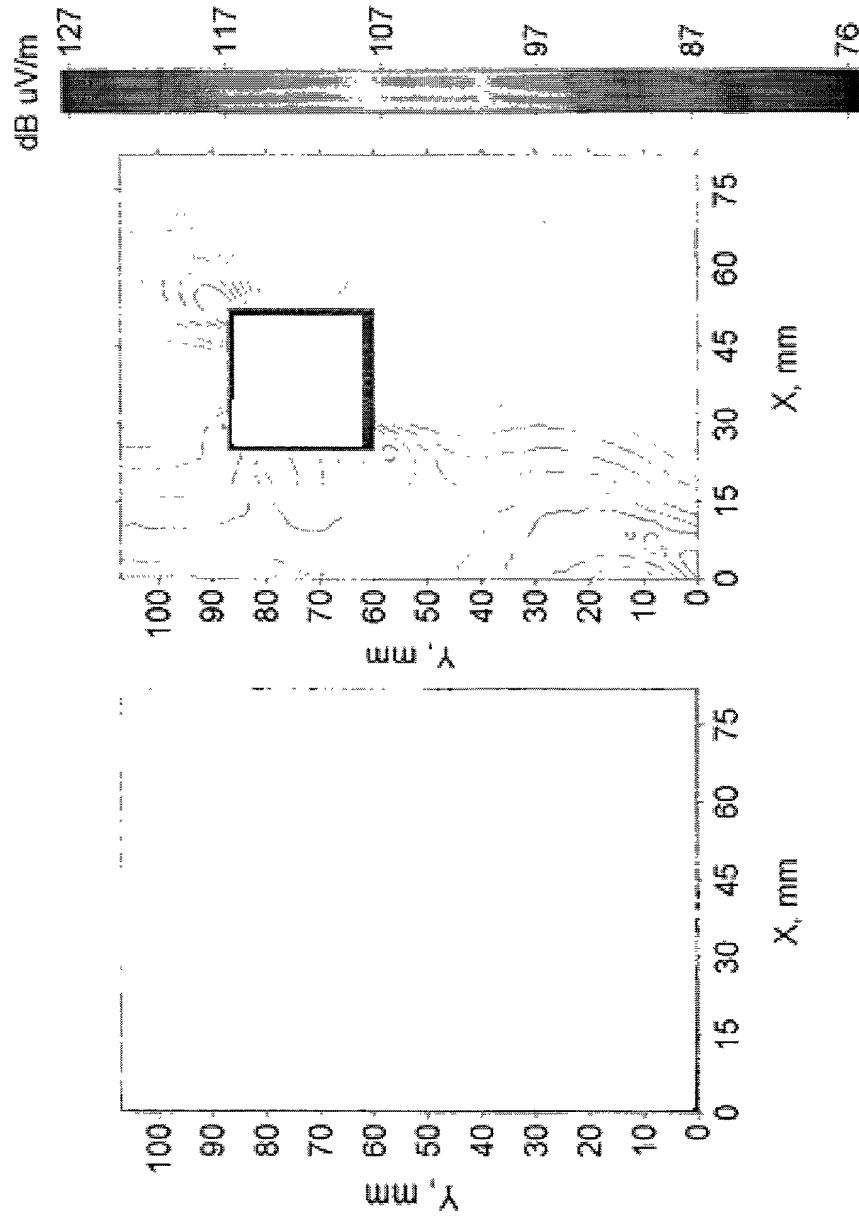


FIG. 89

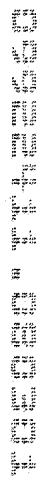
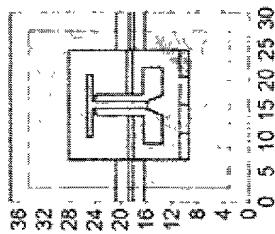


FIG. 90

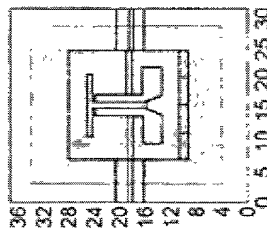
Figure 91 shows two maps of the same device structure, A and B, measured at 1900 MHz. Map A is labeled 'Functional Filter' and Map B is labeled 'Defective Filter'. Both maps show a central region of high signal (white) surrounded by a lower signal region (gray). Map B shows a distinct 'Substrate Fracture Area' indicated by an arrow, which is a region of low signal (dark) on the left side of the central region.

dB uV/m
110
104
98
91
85
78



A. Functional Filter,
1900MHz

dB uV/m
103
95
87
79
71
62



Substrate Fracture
Area

B. Defective Filter,
1900MHz

FIG. 91

0.00 0.05 0.10 0.15 0.20 0.25 0.30 0.35 0.40 0.45 0.50 0.55 0.60 0.65 0.70 0.75 0.80 0.85 0.90 0.95 1.00
 0.00 0.05 0.10 0.15 0.20 0.25 0.30 0.35 0.40 0.45 0.50 0.55 0.60 0.65 0.70 0.75 0.80 0.85 0.90 0.95 1.00

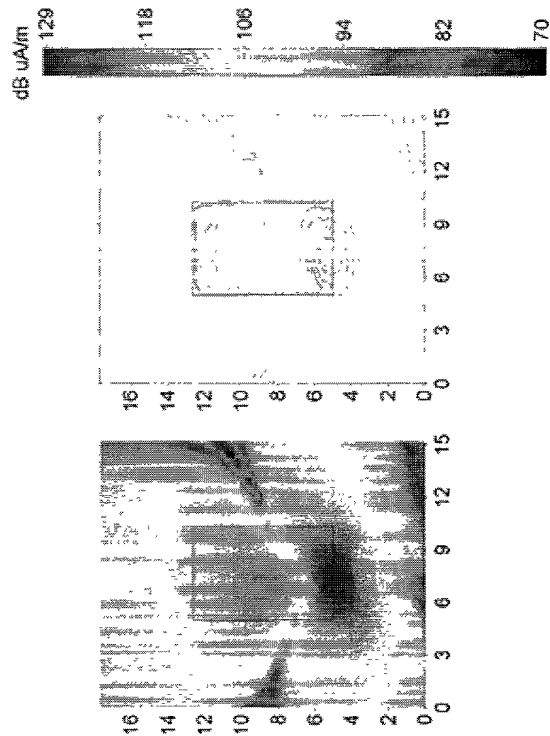
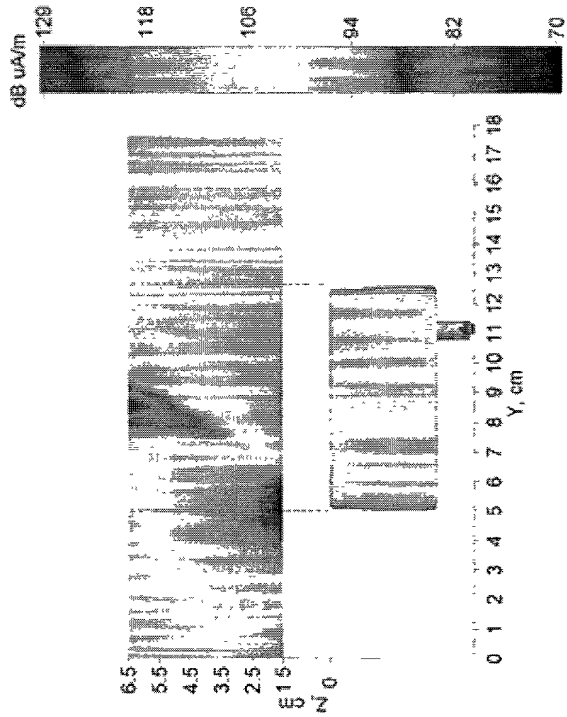


FIG. 92

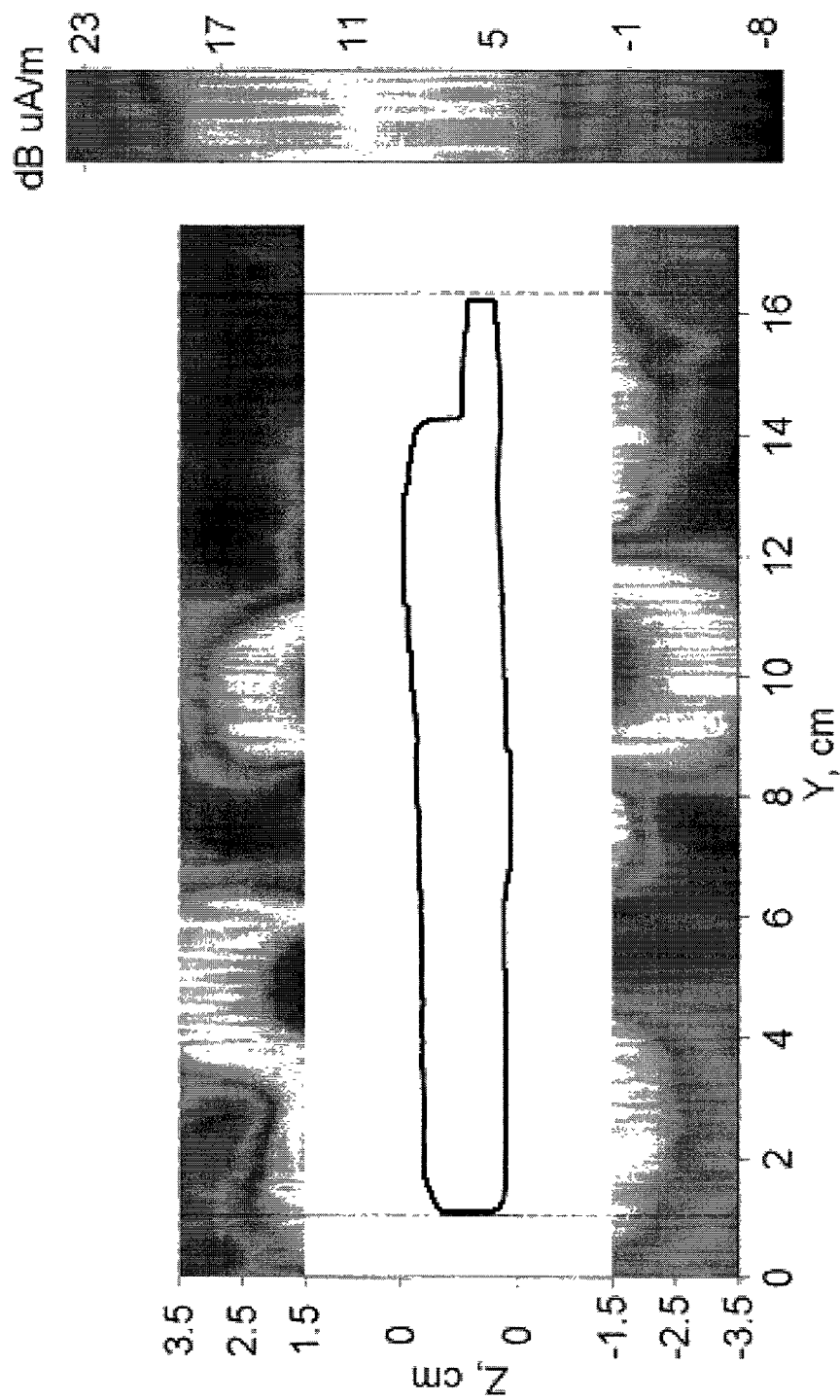


FIG. 93

Figure 94 shows the results of a field measurement of the magnetic field strength (dB uA/m) in the vicinity of a power line. The figure consists of two main parts: a top plot showing the field strength distribution and a bottom plot showing the field strength distribution along the Y-axis.

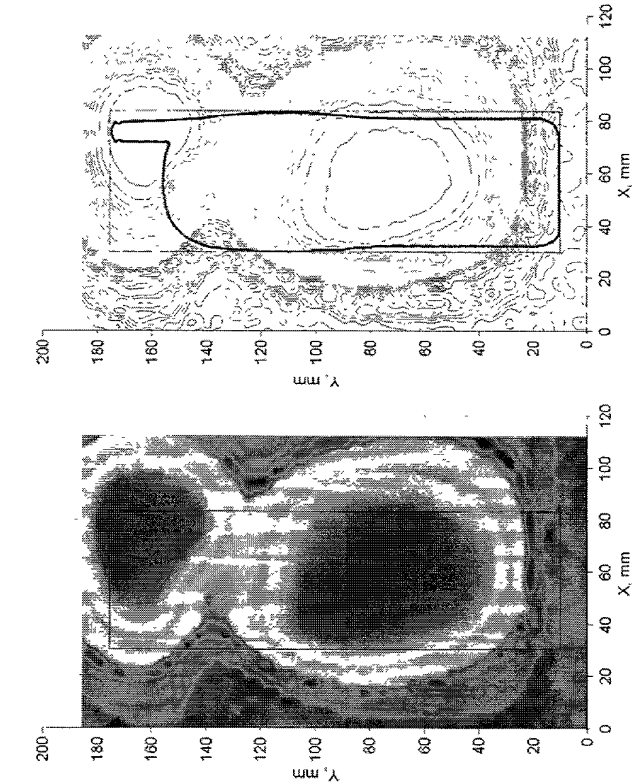
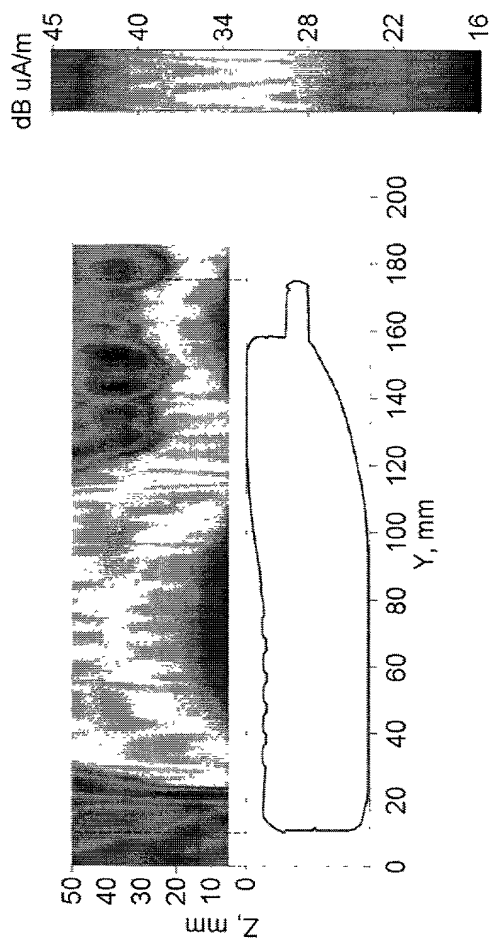


FIG. 94

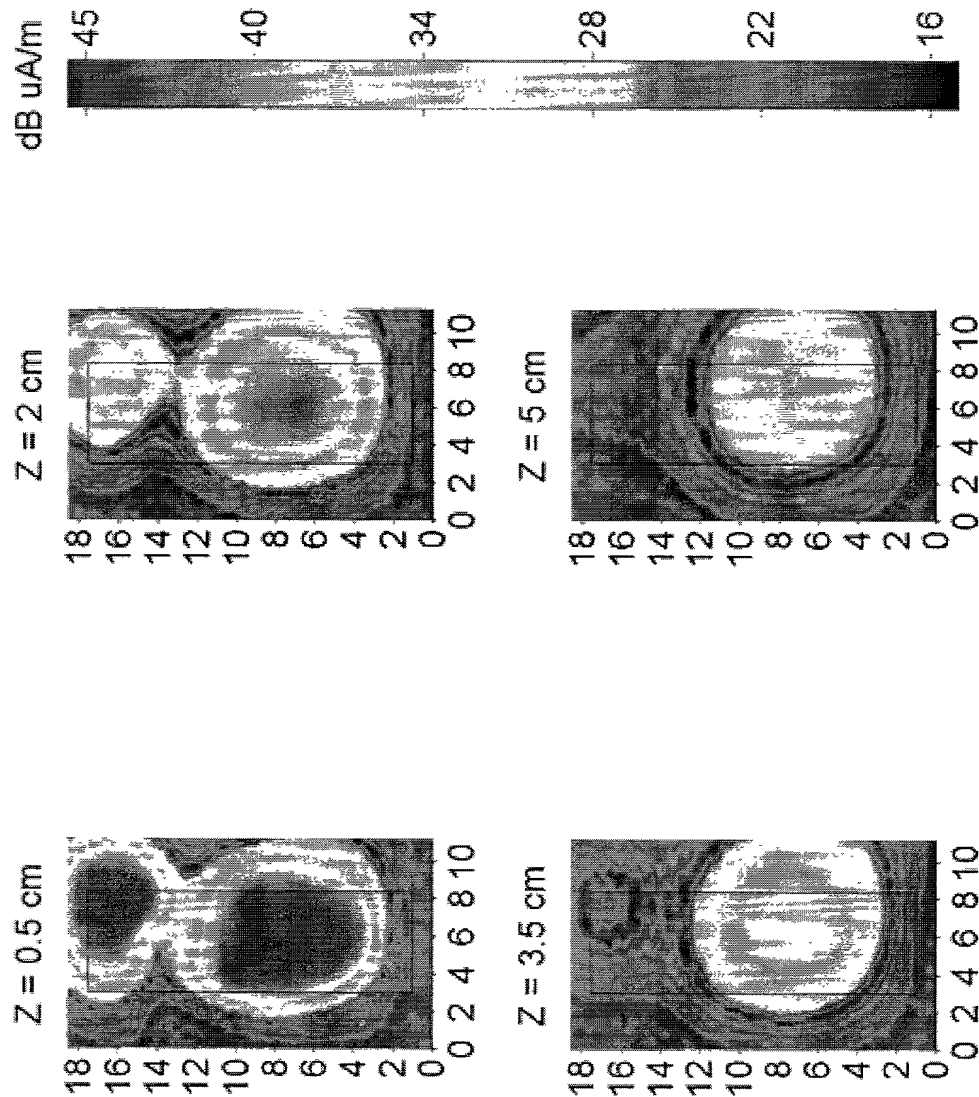


FIG. 95



FIG. 97 is a graph showing the power spectral density (PSD) of the signal for the three different cases: ASICA, ASICB, and ASICC. The x-axis represents Frequency in MHz, ranging from 0 to 1000. The y-axis represents SCFM in (uW/M)/MHz, ranging from 0 to 3000. The graph shows that the PSD is highest for ASICA and lowest for ASICC, with ASICB in between.

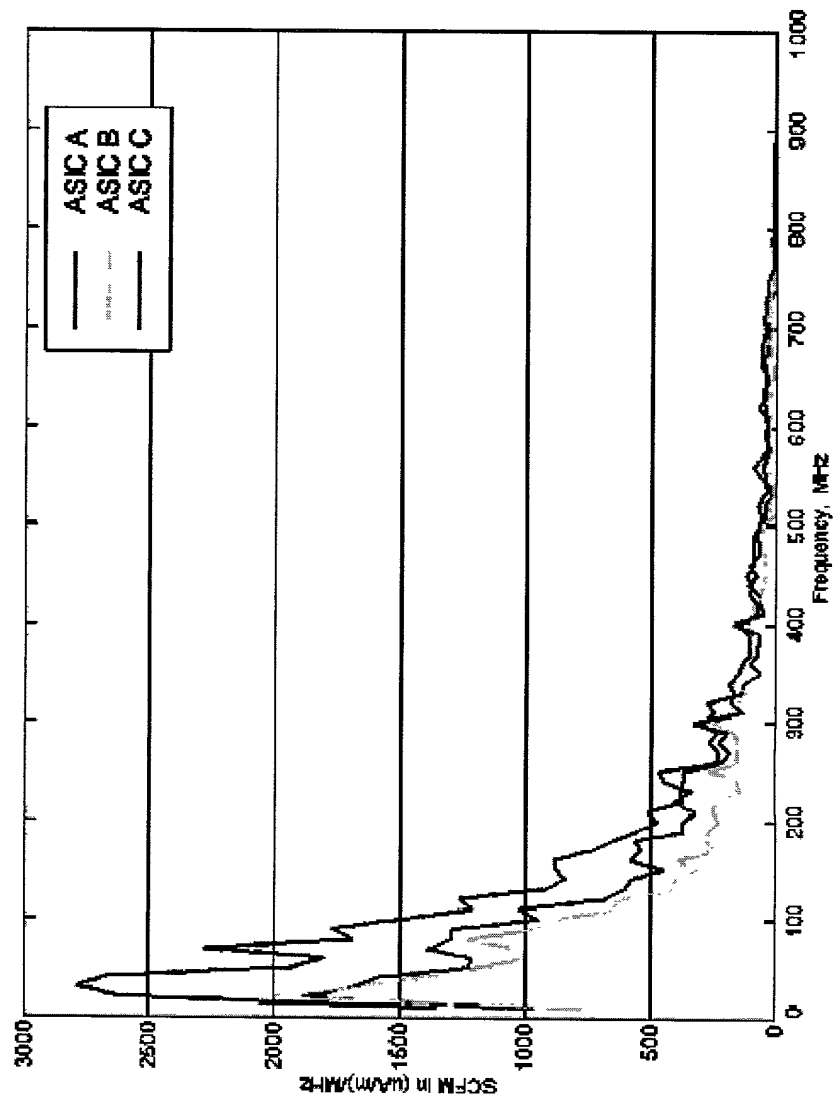


FIG. 97

FIG. 99

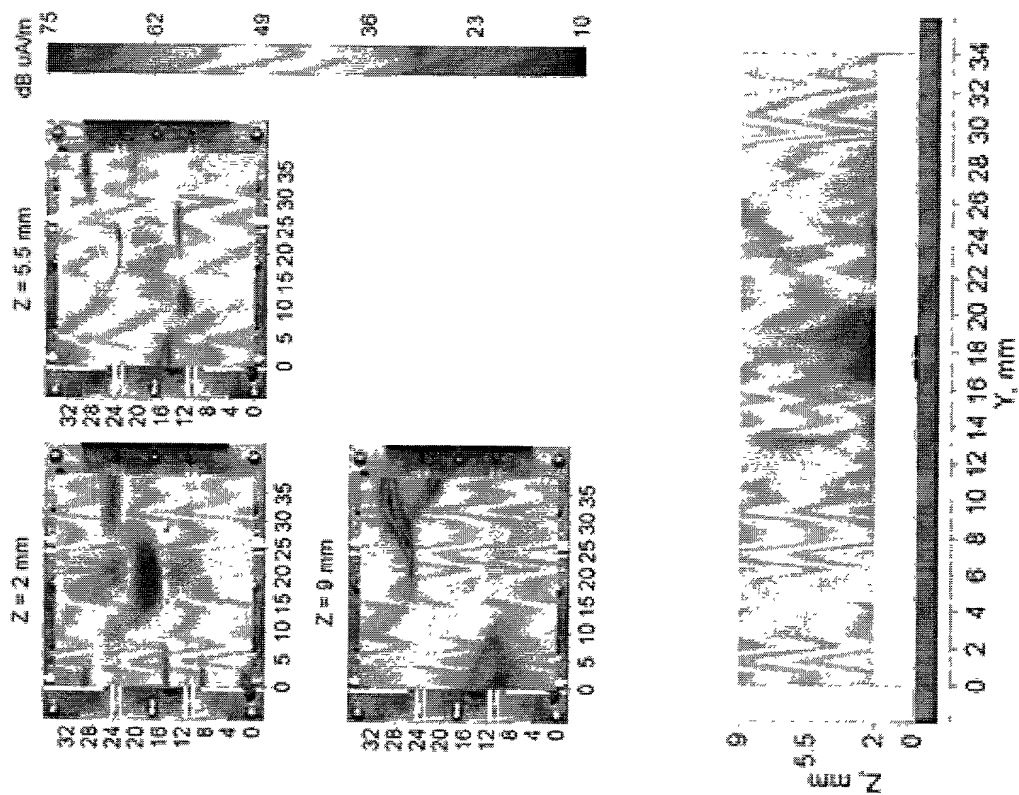


FIG. 100

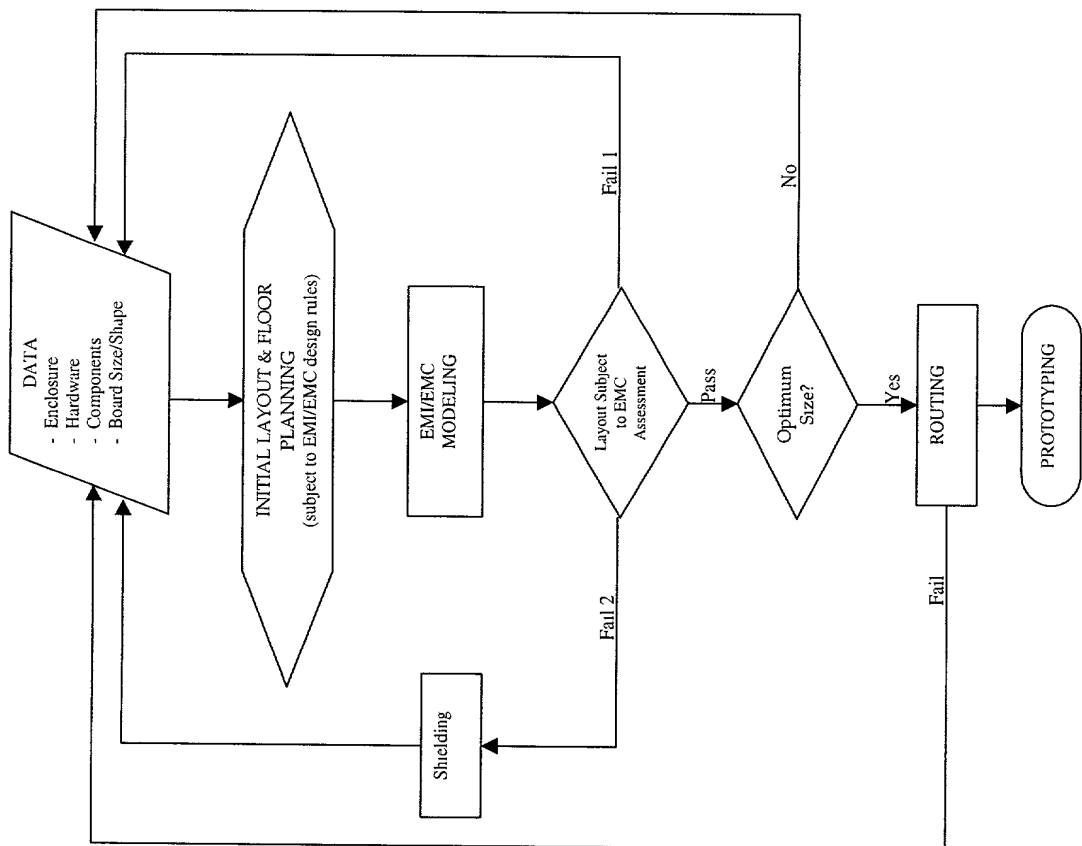


FIG. 100